

**Honeywell**

# **INNCOM e7 Thermostat User Guide**



[https://pages1.honeywell.com/e7\\_Install\\_Instructions.html](https://pages1.honeywell.com/e7_Install_Instructions.html)

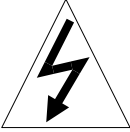
**INSTALLATION AND OPERATIONS GUIDE**



36-00013-02

# Important Safety Information and Installation Precautions

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## Read all instructions

Failure to follow all instructions may result in equipment damage or a hazardous condition. Read all instructions carefully before installing equipment.

## Local codes and practices

Always install equipment in accordance with the National Electric Code and in a manner acceptable to the local authority having jurisdiction.

## Electrostatic sensitivity

This product and its components may be susceptible to electrostatic discharge (ESD). Use appropriate ESD grounding techniques while handling the product. When possible, always handle the product by its non-electrical components.

## High voltage safety test

Experienced electricians, at first contact, always assume that hazardous voltages may exist in any wiring system. A safety check using a known, reliable voltage measurement or detection device should be made immediately before starting work and when work resumes.



## Lightning and high-voltage danger

Most electrical injuries involving low-voltage wiring result from sudden, unexpected high voltages on normally low-voltage wiring. Low-voltage wiring can carry hazardous high voltages under unsafe conditions. Never install or connect wiring or equipment during electrical storms. Improperly protected wiring can carry a fatal lightning surge for many miles. All outdoor wiring must be equipped with properly grounded and listed signal circuit protectors, which must be installed in compliance with local, applicable codes. Never install wiring or equipment while standing in water.

## Wiring and equipment separations

All wiring and controllers must be installed to minimize the possibility of accidental contact with other potentially hazardous and disruptive power and lighting wiring. Never place 24VAC or communications wiring near other bare power wires, lightning rods, antennas, transformers, or steam or hot water pipes. Never place wire in any conduit, box, channel, duct or other enclosure containing power or lighting circuits of any type. Always provide adequate separation of communications wiring and other electrical wiring according to code. Keep wiring and controllers at least six feet from large inductive loads (power distribution panels, lighting ballasts, motors, etc.). Failure to follow these guidelines can introduce electrical interference and cause the system to operate erratically.

## Warning

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

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## Overview

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Over the past 25+ years, hotel owners have trusted INNCOM technology to deliver comfort, energy savings and peace of mind in more than 1.5 million hotel rooms around the world. The e7 Thermostat continues our tradition with the most comprehensive comfort control and energy management platform on the market in a modern design that is pleasing and easy to use. The e7 Digital Thermostat offers expandable multi-purpose, high-quality Direct Digital Control of virtually any Fan Coil Unit (FCU) or Packaged Terminal Air Conditioning (PTAC) found in hotel guestrooms. The e7 comes standard with five relays, an on-board Passive Infrared (PIR) motion detector and a Zigbee and Bluetooth RF transceiver for wireless integrated room automation.

The e7 thermostat is part of an integration platform that connects to a myriad of property management systems, guestroom controls, entertainment services, and door locks. And if that weren't enough, it adds the convenience of Amazon's Alexa voice control.

## Features and Benefits

- Compatible with most HVAC systems found in hotel guestrooms, assisted living facilities, student housing, and more.
- Provides standalone or networked energy management.
- On-board motion sensor.
- Provides real-time data to INNcontrol 3 for reporting, monitoring, central energy control, and diagnostics.
- Integrates with Amazon Alexa Voice Control.
- A beautiful industrial design with a large easy to read keypad.
- Optional external wired or wireless temperature and humidity sensors.
- On-board digital and analog I/O.
- Smart wall plate captures configuration and will upload it into a replacement thermostat.
- Easy third party integrations with Central Electronic Lock Systems and other technologies.
- A dynamic, intuitive user interaction that welcomes the user, with an adjustable backlight based on detected light level.

## Need help? Get in Touch

For 24/7/365 Technical Support:

Tel: +1.860.739.4468, Option #2

Toll free: 1.800.543.1999, Option #2 (US only)

Web: [https://pages1.honeywell.com/e7\\_Install\\_Instructions.html](https://pages1.honeywell.com/e7_Install_Instructions.html)

Technical support e-mail: [support@inncom.com](mailto:support@inncom.com)

For Parts Orders: (M-F from 8:00 AM to 5:00 PM, Eastern Time)

Tel: +1.860.739.4468, Option #3

Toll free: 1.800.543.1999, Option #3 (US only)

Parts order e-mail: [support@inncom.com](mailto:support@inncom.com)

## User Interaction

e7 utilizes progressive disclosure which is an interaction design technique that sequences information and actions across several screens in order to reduce feelings of being overwhelmed for the user. By disclosing information progressively, e7 reveals only the essentials and help the user manage the complexity of the feature-rich applications. The e7 has 3 stages in progressive disclosure (all values are adjustable):

**Dormant Mode** - When the e7 thermostat is not in use by the guest for more than 15 seconds, or when the room is in an un-occupied state (rented or un-rented), the e7 thermostat will only display target temperature, with a dim LCD and keypad backlight.

**Proximity Mode** - As a user approaches the thermostat as detected by the proximity sensor, the backlights will illuminate to full brightness, and display the fan speed, mode and degrees (C or F). This occurs when the user is within the 1m detection range at 0 degrees in front of the laser sensor.

**User Interaction Mode** - When a button is pressed by the user, the thermostat will then display the modes (heat, cool, eco) and the measured temperature.

**Voice Control** - The e7 thermostat is equipped with integration for Amazon Alexa Voice Service, so you can enable hands-free convenience for temperature control in the guestroom. Voice control is enabled through a server to Cloud integration with AWS. Refer to the property specific requirements documentation for details on this feature.

## e7 Interface Navigation

Information Display displays temperature and settings to the end user. In Initialization Mode, Contractor Mode, and Function Tests the display is used to display and select configuration settings. During normal operation, the display can also include icons for visual cues to the e7 current state.



FIC button toggles the display temperature units: Fahrenheit or Centigrade.

Fan button selects fan speed; when pressed successively scrolls through low, medium, high, off.

UP arrow button increments set point temperature.

DOWN arrow button decrements set point temperature.

PIR Motion Sensor.

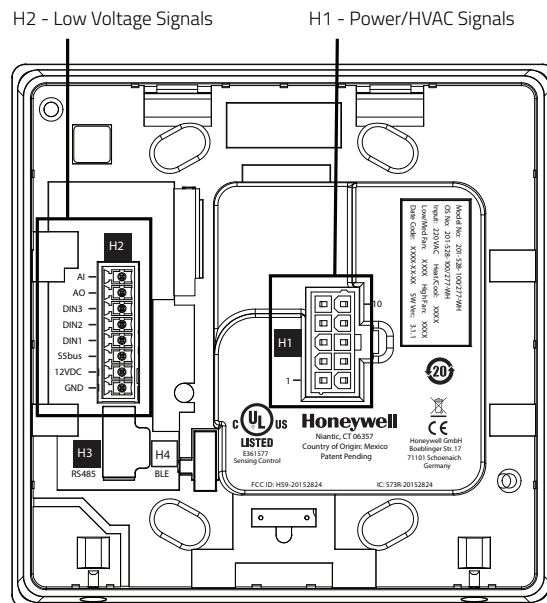
MODE button selects operational status, when pressed successively scrolls through off, auto, heat only, cool only.

# Thermostat Configuration

## Part Numbers

Part Number	Description
201-528-24-BK*	24 Vac Thermostat, Black Onyx
201-528-24-WH*	24 Vac Thermostat, Ice White
201-528-100-BK*	100-277 Vac Thermostat, Black Onyx
201-528-100-WH*	100-277 Vac Thermostat, Ice White
203-528-100-BK	100-277 Vac Thermostat Installation Kit, Black Onyx
203-528-100-WH	100-277 Vac Thermostat Installation Kit, Ice White
203-528-24-BK	24 Vac Thermostat Installation Kit, Black Onyx
203-528-24-WH	24 Vac Thermostat Installation Kit, Ice White
32324212-001	Thermostat Screw Kit Assembly
62-1464.R	Thermostat 24 Vac Harness
62-1455	Thermostat 100-277 Vac Harness
04-1096.FL	e7 Remote Thermistor Probe
201-503	PC-503 Configuration Tool used with INNtool and engINN
*Thermostat purchase includes Installation Kit, Screw Kit Assembly, and Harness.	

## Electrical Connections



**e7 24 VAC POWER AND HVAC SIGNAL (INNCOM PIN 62-1464 R) - H1**

Part Number	Color	Typical Function
1	Green	Ground
2	Red	24 Vac
3	Black	Common
4	Blue	High Fan
5	Brown	Medium Fan or Second Stage Heat
6	Yellow	Cold Water Valve (FCU) or Compressor Signal (Heat Pump)
7	White	Hot Water Valve (FCU) or Reversing Valve (Heat Pump)
8	Grey	Valve Power
9	Violet	Fan Power
10	Orange	Low Fan

**e7 100-277VAC POWER AND HVAC SIGNAL HARNESS (INNCOM P/N 62-1455) - H1**

Part Number	Color	Typical Function
1	Green	Ground
2	Black	Line
3	White	Neutral
4	Yellow	High Fan
5	Orange	Medium Fan or Second Stage Heat
6	Red	Cold Water Valve (FCU) or Compressor Signal (Heat Pump)
7	Brown	Hot Water Valve (FCU) or Reversing Valve (Heat Pump)
8	Grey	Valve Power
9	Violet	Fan Power
10	Blue	Low Fan



**e7 LOW VOLTAGE HEADER - H2**

Part Number	Signal	Typical Function
1	GND	Ground
2	VEE (12 Vdc)	12 Vdc
3	S5bus	Communications
4	DIN1	Entry Door, 2 transitions to active
5	DIN2	Balcony Door/Window, 2 transitions to active
6	DIN3	External PIR/motion sensor, 2 transitions to activate
7	AO	0-10V VFD Fan
8	AI	Remote Thermistor

**e7 RS 485 HEADER - H3 (USES INNCOM PN: 203-250)**

Part Number	Signal	Typical Function
1	GND	Ground
2	VCC	3.3 Vdc
3	RS485_TX	Transmit
4	RS485_RX	Receive
5	RS485_TXE	Enable
6	NU	–

## Typical HVAC Applications

### Thermostat Typical HVAC Application

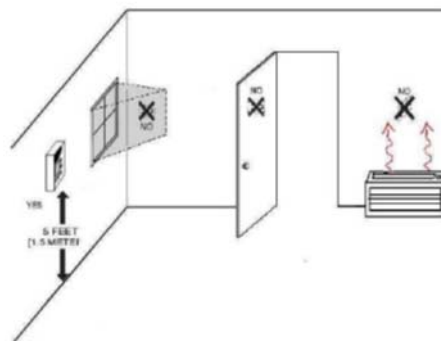
	4 Pipe, 3 Fan, Heat/Cool FCU	2 Pipe, 3 Fan, Cool Only FCU	Heat Pump, 2 Fan 2nd Stage Heat	Heat Pump, 3 Fan Speeds	PTAC, 2 Fan with Heat Strip
K1	High Fan	High Fan	High Fan	High Fan	High Fan
K2	Medium Fan	Medium Fan	W2 2nd Stage Heat	Medium Fan	Not Connected
K3	Low Fan	Low Fan	Low Fan	Low Fan	Low Fan
K4	Cool Signal	Cool Signal	Y-Compressor	Y-Compressor	Y-Compressor
K5	Heat Signal	Not Connected	B/O - Reversing Valve	B/O - Reversing Valve	W-Heat

### Thermostat Power Supply Input Voltage and Relay Specifications

Parameter	Description: 24 Vac Input	Description: 100-277 Vac Input
Heat Relay K4-5	3 amps 125-277 Vac General Purpose	3 amps 125-277 Vac General Purpose
Cool Relay K4-5	3 amps 125-277 Vac General Purpose	3 amps 125-277 Vac General Purpose
High Fan Relay K-1	3 amps 125-277 Vac General Purpose	3.24 FLA 19.4 LRA
Medium Fan Relay K2-3	3 amps 125-277 Vac General Purpose	3.24 FLA 19.4 LRA
Low Fan Relay K2-3	3 amps 125-277 Vac General Purpose	3.24 FLA 19.4 LRA

## Before You Start

- For specific information on how to wire the thermostat to the HVAC equipment, refer to the e7 Installation Instructions and getting started videos which provides the detailed information for wiring and mounting your new e7 thermostat. Go to the INNCOM website: [https://pages1.honeywell.com/e7\\_Install\\_Instructions](https://pages1.honeywell.com/e7_Install_Instructions)
- A unique network address or Room Identification (RoomID) must be assigned to each thermostat regardless of whether it is installed as a standalone application or as part of a wired (RS485) or wireless (RF) DeepMesh network in a centrally controlled Energy Management System (EMS) using the INNcontrol 3 Supervisor software. A rooms list document is typically provided by Honeywell that lists all rooms and the associated functionality. Refer to the property specific documentation for more information.
- The e7 is configured so that it will not call for heat, cool, or low, medium, and high fan speeds to protect the HVAC equipment when it arrives with default settings from the factory. The installer will need to complete the Initialization steps, or the HVAC configuration will need to be pushed to the thermostat from the engINN commissioning tool after the RoomID has been set in the Parameter Menu.
- It is assumed that if you have received your e7 thermostat and you are ready to begin installation, Honeywell has determined through the sales process that the selected HVAC equipment is compatible with the selected e7 thermostat. If you believe this assumption to be incorrect, or you have not validated that the e7 is compatible with the selected HVAC equipment, contact our technical support service center prior to installation.
- Always research thermostat placement carefully before you pull cable. Consult with your system provider on the best placement and follow their guidance to mount it in a neutral location. The cost of poor thermostat placement is high, both in loss of guest comfort and unnecessary energy costs. Follow these guidelines to determine the appropriate installation location for the thermostat:
  - Place thermostats away from windows to avoid bathing the thermostat with solar radiation, which invalidates the unit's temperature sensitivity.
  - Never place thermostats on a wall where an open bathroom or closet door will cover them. A covered thermostat will not register the correct room temperature
  - Take care to place thermostats out of the direct line of air movement. A thermostat mounted on a wall directly across from HVAC discharge vents will be surrounded by air that quickly satisfies the thermostat's guest temperature setting, but not register the room's overall temperature.



- Avoid placing a thermostat on a wall near the fan coil. This causes a waterfall effect of heated or cooled air movement across the thermostat which triggers the HVAC's response to false room temperature readings.
- Beware of value engineering proposals during construction; such as optimizing room wiring to minimize cable runs between thermostats and the HVAC placement. Although this type of value engineering can save money, it often results in higher energy use and compromised guest comfort.
- Make sure:
  - The thermostat is mounted on the wall with the bottom of the unit about 5' from the floor.
  - The unit is level
  - The manufacturer's installation instructions are followed.

## Thermostat Initialization

Power up for the first time puts the e7 thermostat into *Initialization Mode*. This mode provides the contractor or electrician with a simple setup for the thermostat to control the intended HVAC equipment before normal use.

Under normal operating conditions, the e7 thermostat is designed to provide energy management and operates the HVAC equipment using stand-alone energy management configurations. These configurations are intended to utilize a wired door switch and the e7's on-board motion sensor for occupancy detection logic.

Initialization Mode configuration default parameters are outlined in the following tables.

### Default HVAC Unit Control

*\*All default values are adjustable with the INNtool and engINN software configuration tools.*

Function	Default Value*
<b>Comfort Control</b>	
Guest Selectable Temperature Control Limits (rented/Occupied) - Low	65 F
Guest Selectable Temperature Control Limits (rented/Occupied) - High	80 F
LEM Guest Selectable Temperature Control Limits (rented / occupied) - Low	60 F
LEM Guest Selectable Temperature Control Limits (rented / occupied) - High	85 F
Check-in temperature	72 F
Default Thermostat Dormant Mode Display	Set Point
<b>Energy Conservation</b>	
Rented Room - Temperature Clipping Heating	85 F
Rented Room - Temperature Clipping Cooling	55 F
Occupied Mode Temperature Control Delta	1 F
Rented / Unoccupied Setback Temperature Variance (Delta from Guest-selected Temperature Setting)	4 F
<b>HVAC Equipment Operation</b>	
Latent Heat Blowout	45 seconds
Latent Cool Blowout	45 seconds
Fan Operation When Temperature is Satisfied (Occupied Room)	Fan Off
Fan operation Unoccupied / Satisfied	Fan Off
Fan operation Unoccupied /HVAC Off	Fan off
<b>Exposure</b>	
Time Delay for Balcony Door Exposure	30 seconds
Disable Fan	Operate as satisfied
Disable Cooling	Apply cool at danger high
Disable Heating	Apply heat at danger low

Function	Default Value*
<b>Temperature Control</b>	
Thermostat Off low limits	50 F
Thermostat Off high limits	90 F
Un-rented / Un-Occupied temperature low limits (no PMS Present)	62 F
Un-rented / Un-Occupied temperature high limits (no PMS Present)	80 F
User interface mode configuration for manual heat / cool with no auto	No
User Interface mode configuration for manual heat / cool	No
User interface mode configuration for manual check-out	Yes
User interface mode configuration for fixed fan target temperature change	No
<b>Occupancy</b>	
Guest Occupancy Timeout	10 min
Motion (PIR) only Time to Un-Occupied - Awake	4 hrs
Motion (PIR) only Time to Un-occupied - Sleepy	8 hrs
Motion (PIR) Time to Un-rented - Awake	8 hrs
Motion (PIR) Time to Un-rented - Sleepy	8 hrs

### Typical Examples Demonstrating Default e7 Automatic Operation

#### 2-PIPE, 3-SPEED FAN FCU WITH COLD WATER IN PIPE

System State (Off / Auto)	Room Temperature	Set Temperature	Fan	Valve
Off	75 degrees	72 degrees	OFF	CLOSED
AUTO	72 degrees	72 degrees	OFF	CLOSED
AUTO	73 degrees	72 degrees	LO	OPEN
AUTO	75 degrees	72 degrees	MED	OPEN
AUTO	77 degrees	72 degrees	HIGH	OPEN
AUTO	70 degrees	72 degrees	OFF	CLOSED

**2 FAN SPEED HEAT PUMP, REVERSING VALVE POSITION DETERMINES HEATING OR COOLING**

System State (Off / Auto)	Room Temperature	Set Temperature	Fan	Reversing Valve	Compressor
Off	75 degrees	72 degrees	OFF	Cool Position	OFF
AUTO	72 degrees	72 degrees	OFF	Cool Position	OFF
AUTO	73 degrees	72 degrees	LOW	Cool Position	OFF
AUTO	75 degrees	72 degrees	MED	Cool Position	ON
AUTO	77 degrees	72 degrees	HIGH	Cool Position	ON
AUTO	70 degrees	72 degrees	OFF	Heat Position	ON

**4-PIPE, 3-SPEED FAN FCU WITH HOT AND COLD WATER AVAILABLE**

System State (Off / Auto)	Room Temperature	Set Temperature	Fan	Cold Water Valve	Hot Water Valve
Off	75 degrees	72 degrees	OFF	CLOSED	CLOSED
AUTO	72 degrees	72 degrees	OFF	CLOSED	CLOSED
AUTO	73 degrees	72 degrees	LO	OPEN	CLOSED
AUTO	75 degrees	72 degrees	MED	OPEN	CLOSED
AUTO	77 degrees	72 degrees	HIGH	OPEN	CLOSED
AUTO	67 degrees	72 degrees	LOW	CLOSED	OPEN
AUTO	67 degrees	72 degrees	HI	CLOSED	OPEN

**2-PIPE, 2-SPEED FAN FCU WITH COLD WATER IN PIPE, HEAT STRIP, AND CONTINUOUS FAN SPECIFIED**

System State (Off / Auto)	Room Temperature	Set Temperature	Fan	Cold Water Valve	Hot Water Valve
Off	75 degrees	72 degrees	LOW	CLOSED	OFF
AUTO	72 degrees	72 degrees	LOW	CLOSED	OFF
AUTO	73 degrees	72 degrees	LOW	OPEN	OFF
AUTO	75 degrees	72 degrees	HIGH	OPEN	OFF
AUTO	77 degrees	72 degrees	HIGH	OPEN	OFF
AUTO	67 degrees	72 degrees	LOW	CLOSED	OFF
AUTO	67 degrees	72 degrees	HI	CLOSED	ON

## Initial Setup

**IMPORTANT:** Before going through the initial setup sequences, ensure the thermostat is mounted and connected to the Smart Wall Plate.

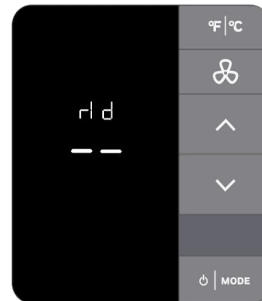
NOTE: Prior to completing Initialization Mode, or pushing the thermostat configuration from engINN, the thermostat is configured with factory defaults to disable any call for heat, cool, or low, medium and high fan speeds to protect the HVAC equipment.

- When properly connected, the thermostat will proceed into INTIALIZATION MODE and display rld.
- When not properly connected to the Smart Wall Plate, the unit will display the alert message SWp and the alert icon will illuminate until the Smart Wall Plate is connected.



### SETUP ROOM ID

1. Once rld is displayed, press MODE. The default Room ID value (65535) is displayed and will begin scrolling across the screen one numerical setting at a time, from highest to lowest (left most to right most value). *Note that the five-digit number is comprised of three fields:* highest digit, middle two digits, lowest two digits. Three settings must be made.
2. Scrolling will stop at the highest digit first. Use the UP/DOWN arrow buttons to change this value (range is 0-6). Press FAN to continue.
3. Set the next two values in the sequence using the UP/DOWN arrow buttons (range is 0-99). Press FAN to continue. Repeat this step for the lowest two values (range is 0-99) and press FAN. Press MODE to accept the value.
4. The new ID number scrolls across the display. The unit *beeps* when the value is stored to memory. Once the scrolling is completed, Press the DOWN arrow button to display HVAC (HAC) menu.



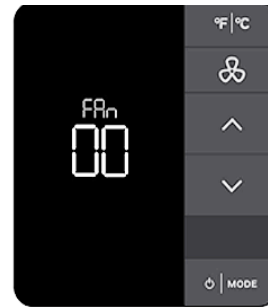
### SETUP HVAC TYPE

1. After HAC is displayed, press MODE.
2. Set the HVAC type desired using the UP/DOWN arrow buttons to choose one of the following options:
  - 00: Not Defined.
  - FC4: 4 pipe fan coil unit (also applicable to 2-pipe without a changeover - cold water only with electric heat).
  - FW2: 2 pipe fan coil unit with back-up electric heat (requires a pipe temperature sensor to detect seasonal water temperature change over).
  - FC2: 2 pipe fan coil unit without back-up electric heat (requires a pipe temperature sensor to detect seasonal water temperature change over).
  - PAC: PTAC unit.
  - HbW: Heat Pump B with W2 assist (default compressor signal (Y) is cooling, reverse valve and compressor signals (B + Y) required concurrently for heating. When applicable, 2nd stage heat signal (W2) is engaged in addition to compressor and reversing valve (B+Y+W2). Use this HVAC type also for Heat Pumps B without 2nd stage heat.
  - HpB: Heat Pump B with W2 replace (default compressor signal (Y) is cooling, reverse valve and compressor signals (B + Y) required concurrently for heating. When applicable, 2nd stage heat signal (W2) is engaged by itself, releasing the compressor (Y) and reversing valve (B) signals.
  - HoW: Heat Pump O with W2 assist (default compressor signal (Y) is heating, reverse valve and compressor signals (O + Y) required concurrently for cooling. When applicable, 2nd stage heat signal (W2) is engaged in addition to the compressor (O+W2). Use this HVAC type also for Heat Pumps O without 2nd stage heat.
  - HpO: Heat Pump O with W2 replace (default compressor signal (Y) is heating, reverse valve and compressor signals (O + Y) required concurrently for cooling, when applicable, 2nd stage heat signal (W2) is engaged by itself, releasing the compressor (Y) signal.
3. Press FAN to accept the value. The unit *beeps* to confirm the value has been set.
4. The display will show --. Press the DOWN arrow button to display the Fan speed (FAN) menu.



### SETUP FAN SPEED

- Once FAN is displayed, press MODE. Then use the UP/DOWN arrow buttons to choose the fan speed:
  - 00: Not Defined
  - Lo: Low Speed (single speed)
  - LH: Low / High
  - LMh: Low / Medium\* / High
  - \*For heat pump models utilizing reversing valve, medium heat and medium fan speed will not be available.*
- Press FAN to execute the setting, the unit *beeps* to confirm it is set.



### Exit Initialization Mode

When setup is complete, exit INITIALIZATION MODE by pressing the °F|°C key. Str is displayed, indicating the setup values are stored in memory, the unit reboots and begins operating the HVAC equipment as configured.



### Resetting Initialization Mode

If the user needs to return to the settings made in INITIALIZATION MODE, do the following:


- Enter SERVICE MODE:
  - (1) Press and hold °F|°C.
  - (2) Press and hold MODE.
  - (3) Press and hold FAN.
  - (4) Release °F|°C.
- Use the UP/DOWN arrow buttons to display rst, then press MODE.
- Use the DOWN button to select 255.
- Press FAN.
- The unit will reset, clear all previous values, and enter INITIALIZATION MODE again.





## Contractor Mode

Contractor mode allows conditioning a space during the construction phase to a defined set temperature and locking out the key pad to prevent tampering. To configure this mode, do the following:

1. Enter SERVICE MODE:
  - (1) Press and hold °F|°C.
  - (2) Press and hold MODE.
  - (3) Press and hold FAN.
  - (4) Release the three buttons.
2. Use the UP/DOWN arrow buttons to display ctr. then press MODE to select ctr.
3. Use the UP/DOWN arrow buttons to select the target temperature (range: Off - 80 degrees F).
4. Press FAN to continue. Once FAN is pressed, the display scrolls the set temperature and the unit *beeps* to confirm the value has been set.
5. Press °F|°C twice to exit SERVICE MODE. The unit displays the target and measured temperature, and the alert icon. Any key press to change set temperature, fan speed or mode are locked out. 



### EXIT CONTRACTOR MODE

1. Enter SERVICE MODE (Step 1 in the previous section).
2. Use the UP/ DOWN arrows to display ctr - - then press MODE to select ctr. Press FAN to turn off CONTRACTOR MODE.
3. Press °F|°C twice to exit SERVICE MODE.

### Property Specific Configurations

Once initial setup is completed, the e7 can support a range of expanded Integrated Room Automation System functionality. This additional functionality is deployed using Honeywell's software tools INNtool and engINN. Training for INNtool and engINN for system design and commissioning is now included in the Level 2 and Level 3 classes.

INNCOM Authorized Systems Integrators should contact their respective E&ES Regional Support Teams to inquire about enrolling in upcoming training sessions. If you have already received training or you are a Honeywell employee supporting the INNCOM business, you can download the software here:

<https://www.inncom.com/login>

## e7 Commissioning/Room Function Tests

The e7 Thermostat is an energy management solution typically deployed in one of the following scenarios:

*Digital Thermostat with EMS* - A programmable DDC thermostat designed for in-room energy management that typically requires a wired or wireless door switch monitor and a motion sensor for non-networked in-room energy management.

*Digital Thermostat with Centrally Controlled EMS* - A programmable DDC thermostat designed for in-room energy management that typically requires a wired or wireless door switch monitor and motion sensor. The thermostat is wired or wireless networked to a server which monitors the system through the use of INNCOM's INNControl 3 Supervisor software.

*Digital Thermostat with Centrally Controlled EMS + Complex Applications* - In addition to the above Centrally Controlled EMS application, the e7 can be augmented with a full range of guest amenities, lighting control, drapery control, Central Electronic Lock Interfaces (CELS), and other third party integrations.

**IMPORTANT:** *It is strongly recommended the following tests are conducted during commissioning the e7 to ensure proper operation and connectivity to the system is achieved.*

### ENTER SERVICE MODE

Some of the following tests require entering the e7 SERVICE MODE. To enter SERVICE MODE, complete these steps:

1. Press and hold °F|°C.
2. Press and hold MODE.
3. Press and hold FAN.
4. Release the three buttons.

### PIR MOTION SENSOR TEST

1. Enter SERVICE MODE.
2. Use the UP/DOWN arrow buttons to select *Pir*.
3. Press MODE to begin the test. The unit *beeps* as it detects motion and the display shows a count of the number of motion pulses detected.  
If there is no audible beep, then the on-board motion sensor is faulty. Contact Honeywell for a replacement e7 thermostat.
4. Press °F|°C twice to exit service mode.



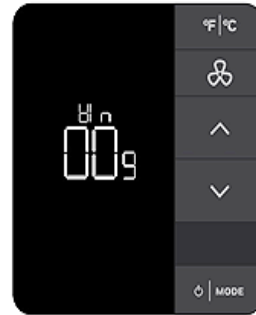
### DOOR SENSOR TEST

1. Enter SERVICE MODE.
2. Use the UP/DOWN arrow buttons to select *door*.
3. Press MODE to begin the test. When the door switch opens (door is open), the e7 emits an audible beep and the display shows a count of the number of times the door status changes from closed to open.  
If there is no audible beep, then double check the door sensor wiring.
4. Press °F|°C twice to exit service mode.



**WINDOW SENSOR TEST**

1. Enter SERVICE MODE.
2. Use the UP/DOWN arrow buttons to select *Win*.
3. Press MODE to begin the test. When the window switch opens (window is open), the e7 emits an audible beep and the display shows a count of the number of times the window status changes from closed to open. If there is no audible beep, then double check the window sensor wiring.
4. Press °F|°C twice to exit service mode.

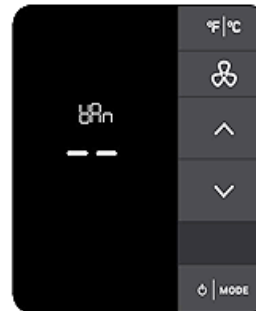


**WIDE AREA NETWORK (WAN) TEST**

**NOTE:** This test is only required when the e7 is wired or wireless connected to the INNControl 3 server in a networked energy management system.

The WAN Test verifies the wireless RF or wired RS485 network connection with the INNControl 3 server.

1. Enter SERVICE MODE.
2. Use the UP/DOWN arrow buttons to select *WAn*.
3. Press MODE to begin the test. This test invokes a command from the INNControl 3 server to scroll the Room ID across the display. If the proper ROOM ID does not scroll across the display, then it is likely the INNControl 3 server is not setup, or the RF channel, RF PAN, or RoomID of the e7 is set incorrectly. If in a wired configuration, check the RS485 wiring.
4. Press °F|°C twice to exit service mode.



**RELATIVE HUMIDITY TEST**

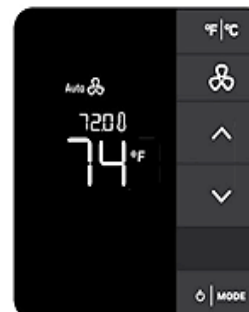
**NOTE:** The e7 thermostat only displays the measured relative humidity in SERVICE MODE.

1. Enter SERVICE MODE.
2. Use the UP/DOWN arrow buttons to select *rH*.
3. Press MODE to display the relative humidity percentage.
4. Press °F|°C twice to exit service mode.



**HVAC CONTROL TEST**

1. Once in normal operating mode, the thermostat displays the set and measured temperature, and the current operating mode.
2. Using the UP/DOWN arrow, increase or decrease the temperature by 3-4 degrees. Listen for the on-board relays to engage, and for the HVAC fan to turn on. Verify the HVAC system is reaching the set temperature.



## Normal Operation Mode

During normal operation, guests or other end-users can make the following settings for a room from the e7 thermostat interface.

### ADJUSTING THE TEMPERATURE SET POINT

Enter a room temperature set point using the thermostat UP/DOWN keys. The set point low limit is 65 °F, the high limit is 80 °F (adjustable).

- The e7 room temperature set point defaults to 72 °F (adjustable) when the guest enters their room for the first time.
- The e7 thermostat displays the temperature set point as a default. If an alternative parameter is displayed (such as measured room temperature), the display reverts to the set point after 10 seconds.



Measured Temperature - The measured temperature icon is displayed above the set temperature on the right when someone interacts with the thermostat.



Outside Temperature - The measured outside temperature icon is displayed above the set temperature on the left when the thermostat is in dormant mode.



Outside Temperature

### CHANGING TO FAHRENHEIT OR CELSIUS

Using the °F|°C button, select whether the temperature set point and room measured temperature are displayed in °C or °F. Each press of the button toggles the display between Centigrade and Fahrenheit.

Fahrenheit - °F is displayed next to the temperature which is shown in 1 degree increments.

Centigrade - °C is displayed next to the temperature which is shown in 0.5 degree increments.

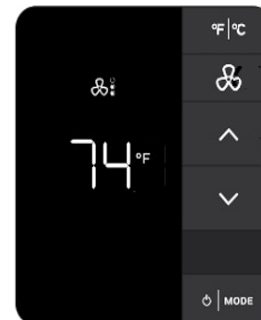


### SETTING THE FAN SPEEDS

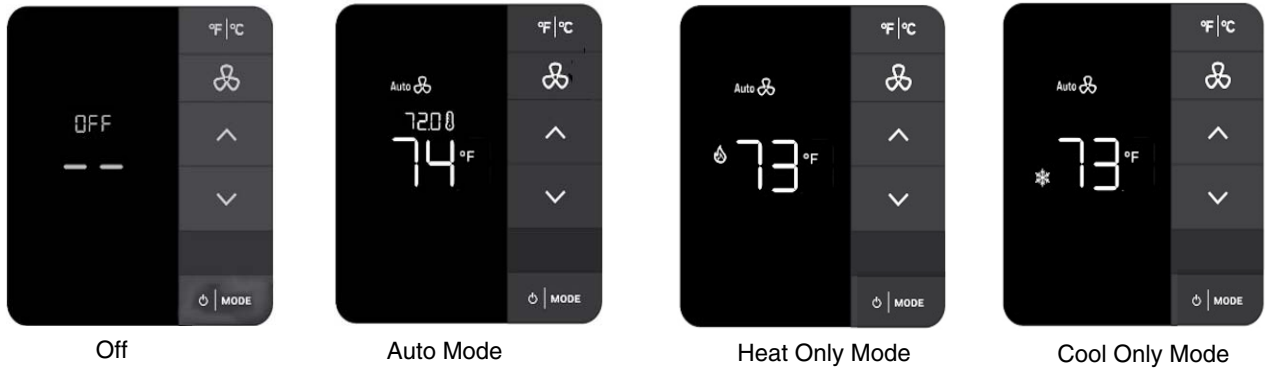
Pressing the fan button forces the e7 thermostat to exit the default auto mode and employ a pre-determined a fan speed.

Auto Mode - Fan speed and heating or cooling are automatically selected to raise or lower room temperature based on the difference between the set point temperature shown on the display and the measured room temperature.

Low, Medium, and High Fan Speed - Pre-determined fan speeds are selected by pressing the fan button; successive presses increment the fan speed low to medium to high (indicated by 1 to 3 vertical dots next to the fan). After the highest fan speed is reached, if the button is pressed again it initiates another cycle through the available fan speeds.



## SELECTING SYSTEM MODE



Pressing the MODE button cycles the e7 between Off, Auto, Heat Only, and Cool Only modes. In each of these modes, the contents of the main display change accordingly. Note that Auto, Heat Only, and Cool Only have identifying icons displayed above (Auto) or to the left of the temperature (in which case the Auto icon is grayed out).

- By default, the thermostat is configured with Off and Auto Modes only.
- In Auto Mode, the measured temperature for the space is compared to the set point. Temperature control is achieved by setting the e7 fan speed to automatic and engaging the heating or cooling valves.
- If the guest selects the fan to run in low speed or high speed via the fan button, then temperature control is delegated to the heating control and cooling control. The fan is no longer modulated until the set point is changed (defaults back to Auto mode) or the Mode button is pressed.
- When the fan is operating under automatic control, the applicable fan speed is chosen based on a dedicated P+I control algorithm to achieve the space's air temperature set point.

During normal operation, the measured air temperature of the space is continuously monitored to ensure it does not exceed the temperature protection high limit of 90 F or fall below the temperature protection low limit of 50 F (the Danger Bands). If the measured air temperature in the space exceeds the Danger Band limits, then the fan coil unit will be overridden to a constant enabled state, the fan speed will modulate under its dedicated P+I control, and the heating coil control valve and cooling coil control valve will modulate under their dedicated P+I control to achieve a measured air temperature within the temperature protection limits.

## Advanced Configuration

Once installed, the e7 requires very little additional configuration. However, there are advanced features in SERVICE MODE that can be used in complex networks. Setting the Advanced Configurations usually requires use of the property specific documentation and references to INNCOM's *Application Note AN323 Binding INNCOM Devices* is required for device specific Address teaching and binding functions.

### LIMITED ENERGY MANAGEMENT (LEM) MODE

A special mode that can be enabled when an important or discriminating guest is checked into a room. A room placed in VIP mode uses expanded target temperature control bands (allows guests to select higher / lower than normal room target temperatures) and does not use larger temperature control bands when the room becomes un-occupied or the room window or balcony door is open. To activate VIP mode for a room for a 3-day period, perform the following steps:

1. Press and hold MODE
2. Press and hold FAN
3. Press and release the UP arrow button, then release the °F|°C and MODE buttons.

In VIP mode the display will read *LEn* for 2 seconds, then return to normal operation.

### ENTER SERVICE MODE

Most of the following features require being in SERVICE MODE. To enter SERVICE MODE do the following:

1. Press and hold °F|°C.
2. Press and hold MODE.
3. Press and hold FAN.
4. Release the three buttons.

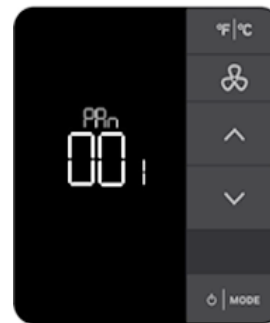
### SETUP ROOM ID

See Initial Setup section in this document.

### SETTING THE PRIVATE AREA NETWORK (PAN ID)

This setting is used to segregate the RF Room Gateway device (typically the e7 thermostat) into sub-networks on the DeepMesh Network which are managed by a router - either B574 or B578. The valid ID range is 0-255; refer to the property specific documentation for applicable PAN ID settings. To set the PAN ID, do the following:

1. Enter SERVICE MODE.
2. Use the UP/DOWN arrow buttons to select *PAn*.
3. Press MODE
4. Use the UP/DOWN arrow buttons to select the valid PAN ID value.
5. Press FAN to store the value in memory.



### SETTING THE RF CHANNEL

**NOTE:** To avoid interference with commonly used 802.11 WIFI RF channels, it is recommended to use ZigBee Channels 15, 20, 25 and 26.

The RF channel value physically represents the RF radio frequency band used by the radio in the e7 thermostat. INNCOM RF devices use ZigBee IEEE 802.15.4 RF channels 11-26 which are 2Mhz wide RF channels between 2.405 GHz and 2.483 Ghz. Two Honeywell Integrated Room Automation devices can communicate with each other only if using the same RF channel. To set the RF channel, complete these steps:

1. If already on service mode go to step 3.
2. Enter SERVICE MODE.
3. Use the UP/DOWN arrow buttons to select *rF*.
4. Press MODE

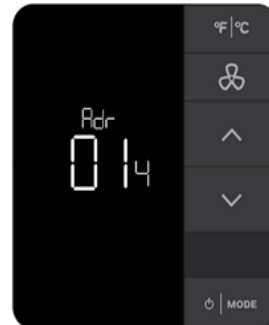


5. Use the UP/DOWN arrow buttons to select the valid PAN ID value.
6. Press FAN to store the value in memory.
7. Press °F|°C to exit service mode.

### TEACHING A DEVICE ADDRESS

Teaching a device address binds a device to the e7 by passing the Room ID, PANID, and RF channel to that device and at the same time setting the target device address to the displayed Adr value. Follow these steps:

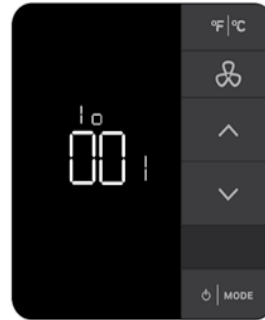
1. Set the Room ID, PAN ID and RF Channel in the e7 according to instructions in this manual.
2. In SERVICE MODE, use the UP/DOWN arrow buttons to select *Adr*.
3. Press MODE. The information display changes to show Adr and value 001. Use the UP/DOWN arrow buttons to change the displayed value to the target address.
4. Press FAN to initiate a *reverse bind*, or press MODE to initiate a *forward bind*. Refer to device-specific binding documentation to determine which type of binding to use.
5. Refer to INNCOM Application Note 323 for device specific Address Teach instructions.
6. Press °F|°C three times to exit service mode.



### TEACHING A DEVICE I/O MAP

Teaching an I/O Map binds a device to the e7 by passing the Room ID, PANID, and RF channel to that device and at the same time activating an I/O Map in the target device. Follow these steps:

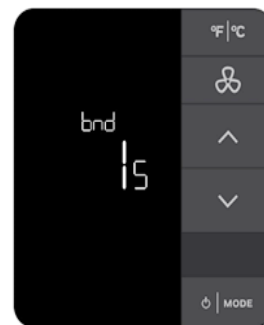
1. Set the Room ID, PAN ID and RF Channel in the e7 according to instructions in this manual.
2. In SERVICE MODE, use the UP/DOWN arrow buttons to select *Io*.
3. Press MODE. The information display changes to show Io and a value. Use the UP/DOWN arrow buttons to change the displayed value to the desired I/O map.
4. Press FAN to initiate a *reverse bind* or press MODE to initiate a *forward bind*. Refer to device-specific binding documentation to determine which type of binding to use.
5. Refer to INNCOM Application Note 323 for device specific I/O Map Teach instructions.
6. Press °F|°C three times to exit service mode.



### BINDING A REMOTE DEVICE

Use this feature to bind a Ving or Salto RF lock to a device that does not have a User Interface, such as a PC502.4G or Evora. To bind a remote device, do the following:

1. Set the Room ID, PAN ID and RF Channel in the e7 following instructions in this manual.
2. In SERVICE MODE, use the UP/DOWN arrow buttons to select *Adr*.
3. Press MODE. The information display changes to show *Adr* and value 001. Use the UP/DOWN arrow buttons to change the displayed value to the target address (65 for Timelox, 69 for Salto).
4. Press F/C to temporarily store the defined address. The display changes back to show *Adr*.
5. Press the UP arrow button until *bnd* is selected. Press MODE to show current value.
6. Use the UP/DOWN arrow buttons to change the displayed value to the Address to send the Open Bind window command.
7. Press FAN button to make the e7 send the Open Bind window command to the defined address.
8. Press °F|°C twice to exit service mode.



### PING A DEVICE

Sends a ping to a specific in-room device, which verifies device communication. If the target device communicates via RF, verifies direct RF connectivity between the e7 and the target. If the target device is S5 bus connected to an RF radio equipped device, verifies communication from the e7, through the RF Device and to the S5 bus connected device.

1. Enter SERVICE MODE.
2. Use the UP/DOWN arrows to scroll to *PnG*.
3. Press MODE.
4. Use the UP/DOWN arrow buttons to select the address of the target device to be pinged.
5. Press FAN to initiate pinging the target device. 4 commands will be sent to the target address and if it is communicating the reply values will be displayed followed by an audible click.
6. Press the F/C button to stop pinging.
7. Press °F|°C to exit service mode.



### RESET THE e7 THERMOSTAT

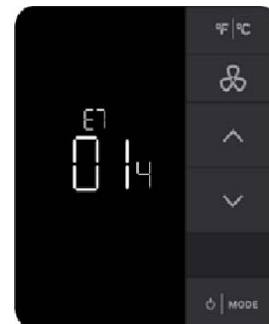
This feature can reset the e7 thermostat, or it can be used to reset a remote device.

1. Enter SERVICE MODE.
2. Use the UP/DOWN arrows to scroll to the *rst*
3. Press MODE.
4. Either enter zero (0) to reset the e7, or enter the address of the intended device to reset.
5. Press FAN to execute the reset.



### SETTING THE e7 THERMOSTAT ADDRESS

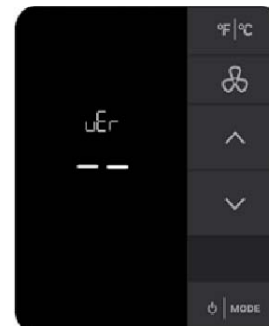
1. Enter SERVICE MODE.
2. Use the UP/DOWN arrows to scroll to *e7* and press MODE.
3. Enter the desired address for the e7 and press FAN to execute.



### READING THE e7 SOFTWARE VERSION

This parameter displays the versions of the 16 firmware banks, such as the main firmware version, bootloader version, IRAS, CBL, APP Map, etc. Contact an INNCOM Applications Engineer for a detailed understanding of this parameter.

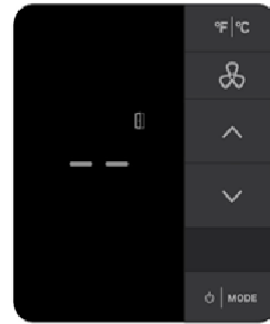
1. Enter SERVICE MODE.
2. Use the UP/DOWN arrows to scroll to *ver*.
3. Press MODE. The display scrolls the firmware versions by the individual banks.
4. Stop reading the bank versions at any time by pressing the F/C buttons.
5. Press °F|°C to exit service mode.





**DOOR OPEN ALERT**

The door icon is illuminated and --- is shown on the display when a door, balcony, or lanai that exposes the room to the outdoors is open.



**Bluetooth/Low Battery/Equipment Alerts**

**Bluetooth**



The Bluetooth icon is displayed in SERVICE MODE when the Bluetooth transceiver is enabled.

**Low Battery Aler**



The low battery alarm is displayed in SERVICE MODE on battery powered e7 models when the batteries need to be replaced.

**Equipment Alert**



The equipment alarm is displayed in either SERVICE MODE or in CONTRACTOR MODE.



## INNtool/engINN Support

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INNtool is software used to create INNCOM Integrated Room Automation Systems (IRAS). For any configuration requirements beyond what is noted in this document, INNtool and engINN are software tools that are used to create the configuration capabilities for projects which are more complex in nature, typically including the INNControl 3 server and combining INNCOM lighting, drapery, amenities control, and third party integrations with the e7 thermostats Energy Management System (EMS). INNtool also produces property specific documentation including:

- Property Bill of Materials
- Wiring Diagrams
- Software for the thermostat and other room automation devices (as required)
- Commissioning documents
- EMS setting sheet
- INNControl 3 scripts
- Switch Function Tables
- Switch Matrix

engINN software that permits a trained INNCOM installer or system integrator to push the engineered configurations for the Integrated Room Automation System

Training for INNtool and engINN is part of the Level 2 and Level 3 Training Classes. INNCOM Authorized Systems Integrators should contact their respective E&ES Regional Support Teams to inquire about enrolling in upcoming training sessions. If you have already received training or you are a Honeywell employee supporting the INNCOM business, you can download the updated Revision by going to the following URL: <https://www.inncom.com/login>