Honeywell

e7w Wireless EMS Thermostat

INSTALLATION INSTRUCTIONS

FOR ALL UNITS IN CARTON. DO NOT THROW AWAY!

INSTALLATION REQUIREMENTS

Required Installation Hardware

- Four 6-32 × 1.5” Philips Pan head screws (provided with e7w) if attaching to a 4X4 electrical junction box.
- Four AA alkaline batteries; provided with e7w.
- e7w Smart Wall Mounting Plate; provided with e7w.
- Three 4-24 1/2’’ Phillips screws Phillips captive screws; provided with e7w.
- Phillips Screwdriver.
- Wire cutters/strippers.

Required Commissioning Tools

DO NOT THROW THIS UNIT AWAY: One PC-503 USB Commissioning Tool and USB cable per property/project is shipped to the site.

This tool is used in conjunction with Honeywell’s engINN commissioning software when advanced commissioning of the e7w is required by a trained and certified INNCOM technician. Contact Honeywell technical support for more information.

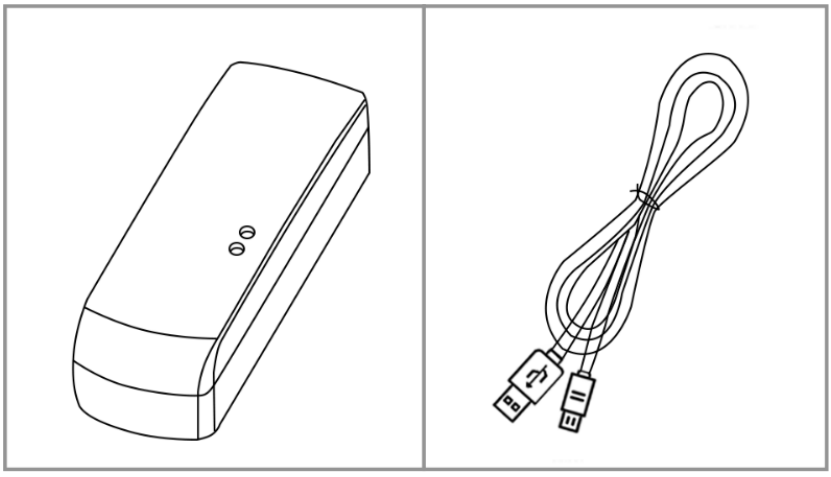

Figure 1: PC-503 USB commissioning tool and cable

⚠ CAUTION

- Read instructions carefully. Failure to follow them could damage the product or create a hazard.
- Check the ratings given in the instructions and on the product to ensure that the product is suitable for your application.
- Installer must be a trained, experienced service technician.
- After installation is complete, check product operation as indicated in instructions.
- For variations of these systems, refer to the installation instructions of the controlled equipment.

INSTALLATION

Location

Select a location about 1.5m (5ft.) above the floor with good air circulation at average temperature. Do not mount thermostat where it may be affected by:

- Drafts or dead spots behind doors or in corners.
- Hot or cold air from ducts.
- Radiant heat from sun or appliances.
- Concealed pipes or chimneys.
- Unheated (un-cooled) areas behind the thermostat.
- Near other RF sources/ transmitters to avoid interference.
- When the thermostat is equipped with PIR, consider view angle, range characteristics, and mounting position for proper coverage.

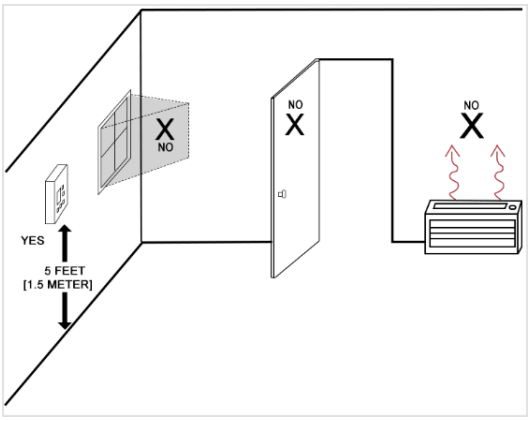

Figure 2. Recommended mounting location

Mounting

The e7w Wireless EMS thermostat supports mounting on the following standard mounting junction boxes; US single-gang, US double-gang and UK standard gang. The installation kit provides a Smart Wall Mounting Plate.

If mounted on a single-gang box, the right side (keypad side) of the e7w overlaps the wall area to the right.

To mount the e7w, follow the below steps:

1. Take the Smart Mounting Plate and orient it with the raised arrow embossed on mounting plate pointing UP.
2. Attach the plate to the junction box using the supplied screws as shown in Figure 3.
3. Insert the 4 AA alkaline batteries.

Note:

- Use alkaline batteries only.
- Refer the “Battery details” sections for more information.

4. After inserting AA batteries, all segments and characters of the LCD are illuminated for couple of seconds. Confirm all segments and characters on the e7w LCD are displayed correctly.

   Refer LCD Display section for more details.
5. If the LCD displays blank information, run the following checks:

a. Verify that the batteries installed in correct terminal.

b. Check the battery voltage.

6. Hook the tabs at the top rear of the e7w housing into the matching depressions at the top of the Smart Mounting Plate and rotate the bottom of the housing toward the wall until it snaps into place.
7. After startup, the e7w will cycle through RF Channels 26, 25, 24... all the way to 11 and send a 0x00061 Battery Powered thermostat exchange message on each RF Channel looking for a reply from an HVAC thermostat partner with the same Room ID currently stored in the e7w. Allow this process to continue until completion. Later you need to configure the actual Room ID and other required parameters into the e7w.
8. Secure the housing to the Smart Mounting Plate with the two small captive screws at the bottom of the housing.
9. After you configured Room ID and other required parameters, restart the device and wait for 5 seconds LCD will display all configured values and various mods.

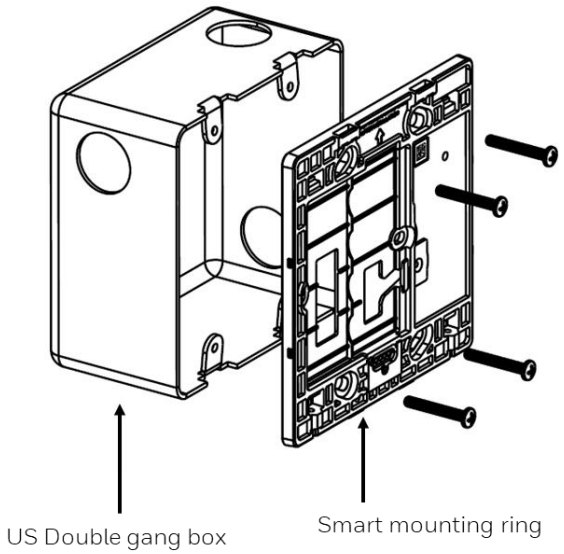

Figure 3. e7w exploded assembly reference

Battery Details

Figure 4. e7w Battery polarity reference

1. Battery Compartment: Holds 4 AA Alkaline Batteries.
2. Insert the 4 AA alkaline batteries, matching the “+” terminals on the batteries to the “+” symbols in the battery compartment, as shown in Fig. 4.

⚠ CAUTION

Risk of explosion if battery is replaced by an incorrect type.

Dispose the used batteries as per instructions under WEEE Directive 2012/19/EC.

Specifications

Mounting	Standard US Double Gang: w/o Spacer Ring Standard US Single Gang: w/o Spacer Ring Standard UK Single Gang: w/o Spacer Ring
Dimension	L 120mm x W 120mm x H (23) mm (w/o spacer)
Ambient Operating	41 to 149 °F (5 to 40 °C), 0-95% RH non-condensing
Ambient Storage	33 to 149 °F (1 to 65 °C)
C/F degrees display	Toggle Button located on front display.
In room Temperature	60°F to 85°F (± 1°F) [15°C to 30°C (± 0.5°C)]
Power	6VDC Alkaline Batteries.
Color Variants	Ice White & Black Onyx
Display resolution	HTN LCD, 0.5 °C (0.1 °F in test mode).
Standard dead band	2 °F (1 °C) between heating and cooling.
Thermostat Measurement range	33 to 99 °F (1 to 37 °C) +/- 1.8 °F.
Outdoor air temperature display	Temp 0 to 99 °F (-18 to 37 °C) as reported from web service
Motion sensor	120° View Angle, 10meter line of sight
Light Sensor	Gamma Value 0.7, Spectral response 550 – 650nm.
Humidistat	3 % RH, in range from30-95 % RH +/- 5%.
Frequency range	2405MHz to 2480MHz
Maximum power	5dBm
Hardware version	A
Firmware version	1.1.0

Wireless Communications

Parameter	Description
RF Data Rate	250kbps
Antenna Type	SMT
Indoor range	70ft
Transmit Power	+5dBm
Receive Sensitivity	-95dBm
Frequency Band	2.4Ghz

Encryption	AES -128
Protocol	802.15.4
Frequency Channels	11-26

Note:

- Required Deep Mesh Network 2.4GHz.

LCD Display

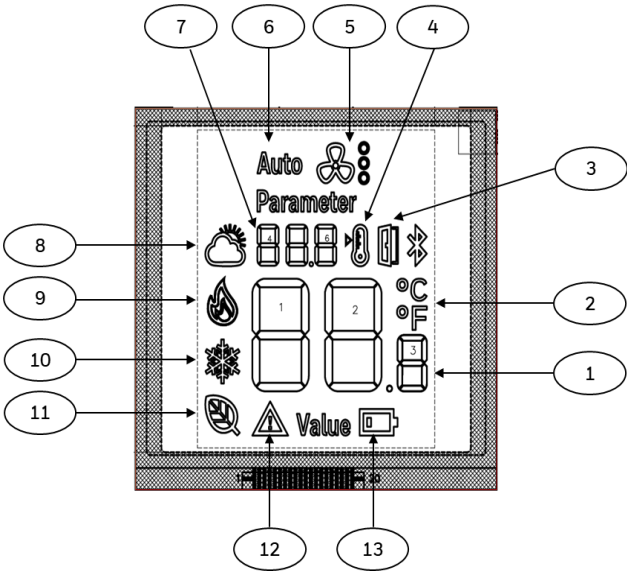

Figure 5. e7w LCD display segments

1	Target (SET) temperature value
2	Temperature units
3	Door or Lanai
4	Measured temperature icon
5	Fan Speed (Low, Medium, High)
6	Auto Fan speed
7	Measured temperature value
8	Outside temperature icon
9	Heat only mode
10	Cool only mode
11	Eco mode
12	Equipment alarm
13	Low battery alarm

INITIAL SETUP

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

Note:

- When properly connected, the thermostat will proceed into INTIALIZATION MODE and display **rId.**
- 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.

If you see **SWp** on the display, most likely the unit is not connected or properly seated on the Smart Wall Plate. Unscrew the captive screws and re-seat the thermostat. Once properly connected, the display will start up as noted. Take care not to over-tighten the screws and note any irregularity on the wall surface that may lead to an insecure connection between the Smart Wall Plate and thermostat.

Setup Room ID

Figure 6. Setup Room ID

1. Once **rId** 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:

   The five-digit number is comprised of three fields: highest digit, middle two digits, lowest two digits (HI | MED | LO), default value (6 | 55 | 35). Three settings must be made.

2. In HI (high) value page, use the **UP/DOWN** arrow buttons to change this value (range is 0-6). Press **FAN** to continue.
3. Set the MED (medium) values in the sequence using the UP/DOWN arrow buttons (range is 0-99). Press **FAN** to continue.
4. Repeat the same step for the LO (low) two values (range is 0-99) and press **FAN** to continue. Press **MODE** to accept the value.
5. The new ID number scrolls across the display. The unit beeps to confirm the value is stored to memory. Once the scrolling is completed, screen will return to INTIALIZATION MODE.
6. If you want to continue, press the **DOWN** arrow button to display **rF** mode (RF channel for IRAS communication).

   Or

   If you want to exit the INTIALIZATION MODE, press the **°F | °C** key.

   After you configured ROOM ID, you need to configure RF channel for IRAS communication.

Figure 7. Configuring Room ID

Setup RF Channel

Figure 8. Setup RF Channel

1. After **rF** is displayed, press **MODE**.
2. Default **rF** value 26 displayed on the screen.
3. Use the UP/DOWN arrows to change value range between 11 to 26.
4. Press **FAN**, the unit beeps to confirm the value stored in the memory and display will be back **rF.**
5. Press **MODE** to check the value.
6. Once the **rF** configured, Press **°F|°C** to return INTIALIZATION MODE.
7. If you want to continue, press the **DOWN** arrow button to display **PAn** mode

   Or

   If you want to exit the INTIALIZATION MODE, press the °**F|°C** key.

   After you configured RF channel, you need to configure PAN channel for IRAS communication.

Figure 9. Configuring RF channel

Setup PAn ID

Figure 10. Setup PAn ID

After **PAn** is displayed, press **MODE**.

1. Default **PAn** value is 0 displayed on the screen.
2. Use the UP/DOWN arrows to change value range between 0 to 255.
3. Press **FAN**, the unit beeps to confirm the value stored in the memory, the display will be back to **PAn**.
4. Press **MODE** to check the value.
8. Once the **PAn** configured, Press **°F|°C** to return INTIALIZATION MODE.
9. If you want to continue, press the **DOWN** arrow button to display **rld** mode

   Or

   If you want to exit the INTIALIZATION MODE, press the °**F|°C** key.

Service Mode

To configure the HVAC controller, wireless motion sensors, and doors/windows/balcony switches with e7w, you need to set e7w into **Service Mode**.

To enter Service, follow the below steps:

1. Press and hold **°F|°C** key.
2. Press and release **MODE**.
3. Press and release **FAN**.
4. Release °**F|°C** key.

BINDING AUXILIARY DEVICES

Note:

Before binding or verifying auxiliary devices.

- e7w must be configured with correct Room ID, PAN ID, and RF Channel.
- For forward bind method, place the remote device into a discovery mode that can receives the request sent from the thermostat and reply to the request.
- For reverse bind method, mount the thermostat in a such location, that can receive request sent from the remote device and reply to the request.

Binding PC502.4G

1. Enter **SERVICE MODE**. use the UP/DOWN arrow buttons to select **Io**.
2. Press **MODE**. The information display changes to show **Io** and a value.
3. Use the UP/DOWN arrow buttons to change the displayed value range from 0 to 255. Set the **Io** value to the desired I/O map number.
4. Press **FAN** to initiate a reverse bind.
5. Press **Reset/Bind** switch on the PC502.4g (use a small point like the end of a straightened paper clip).

   If the PC502.4G binds successfully, it will flash Led and send message to make the unit beep, confirming that the bind was successful.
6. Press **°F | °C** to exit service mode.

Binding Door/Window/Balcony Switch

1. Enter **SERVICE MODE**, use the UP/DOWN arrow buttons to select **Io**.
2. Press **MODE**. The information display changes to show **Io** and a value.
3. Use the UP/DOWN arrow buttons to change the displayed value range from 0 to 255. Set the **Io** value to the desired I/O map number.
4. Press **FAN** to initiate a reverse bind or press MODE to initiate a forward bind.
5. Press the **S1** switch on the device to initiate binding process.

   If the device binds successfully, it will flash Led and send message to make the unit beep, confirming that the bind was successful.
6. Press **°F | °C** to exit service mode.

Figure 11: Configuring IO mode

VERIFYING AUXILIARY DEVICES

1. Enter **SERVICE MODE**, use the UP/DOWN arrow buttons to select **PnG**.
2. Press **MODE**. The information display changes to show PNG and a value.
3. Use the UP/DOWN arrow buttons to the address of the target device to be pinged.
4. Press **FAN** to initiate pinging the target device. After few seconds, it will start communicating the reply and values will be displayed.
5. Press the **°F | °C** button to stop pinging.
6. Press **°F | °C** to exit service mode.

STANDARDS AND APPROVALS

EN

- Product Standard – EN 60730-1:2011 and EN 60730-2-9:2010 (covers EMC and LVD Safety requirements).
- EMC Standard – ETSI 301489-1 V2.2.1, ETSI 301 489-17 V 3.2.0.
- EMC Standard EN 55032 – Radiated RF Emissions.

UL (IEC)

- UL 60730-1, 5th edition *and* UL 60730-2-9, 4th edition.
- IEC and EN EMC standards:
  - EU RoHs: EN 50581:2012 per EU RoHS Directive 2011/65/EU,
  - EN 50581:2012 per EU RoHS Directive 2011/65/EU.
  - IEC60417, No.5957. For indoor use only.
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Class III equipment per IEC 61140.
- Radio – FCC Part 15 Subpart C (15.249), Industry Canada RSS-210 Issue 9:2016 and RSS-GEN Issue 4:2014.
- IPx1 protection.
- Pollution Degree 2.
- Type 1 action, operating control.

CSA

- **CSA (IEC Based),** Note 1 on standards,
  Note 2 on aspects impacted by transition
- **CAN/CSA E60730-1, 5th edition**
- **CAN/CSA E60730-2-9, 4th edition**

Note 1

We have a choice of the IEC based path or the updated version of Spec. 24. Considerations:

- CSA C22.2 No. 24-93 has been in place but will not be allowed from Jan. 1, 2017. It is being replaced with CSA C22.2 No. 24-2015 as of that date (Environmental Requirements).
- CSA C22.2 No. 24-2015 references CSA C22.2 No. 0.8 for electronic controls with safety functions, functional safety and EMC instead of 60730-1 Annex H.
- According to CSA, the deviations for Canada added to CAN/CSA 60730-1 and 60730-2-9 make this choice equivalent to use of CSA C22.2 No. 24-2015.

Regulatory Compliance

UL Listing

This device meets UL 60730-2-9, CAN/CSA-E60730-2-9 Standard for Automatic Electrical Controls - Part 2-9: Requirements for Temperature Sensing Control

Federal Communications Commission (FCC)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no

guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with FCC and IC radiation exposure limits set forth for an uncontrolled environment. This device should be installed and operated with minimum distance of 20cm between the radiator and your body. This device must not be co-located or operating in conjunction with any other antenna or transmitter.

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.

Tout changement ou modification n'ayant pas été expressément approuvé par la partie responsable de la conformité pourrait annuler l'autorisation de l'utilisateur d'utiliser l'équipement. Cet équipement a subi des tests prouvant sa conformité aux limites prescrites pour les appareils numériques de classe B, selon la partie 15 des règlements de la FCC. Ces limites ont été conçues pour fournir une protection raisonnable contre les interférences nuisibles lorsque l'appareil est utilisé dans un environnement résidentiel. Cet équipement génère, utilise et peut émettre de l'énergie radioélectrique et, s'il n'est pas installé et utilisé conformément aux instructions, peut causer des interférences nuisibles aux communications radio. Toutefois, il n'y a aucune garantie que ces interférences ne puissent survenir dans une installation particulier. Si cet équipement cause des interférences nuisibles à la réception de signaux de radio ou de télévision, ce qui peut être déterminé en l'éteignant et en l'allumant, l'utilisateur peut essayer de corriger ces interférences par les mesures suivantes :

- Réorienter ou déplacer l'antenne réceptrice.
- Augmenter la distance entre l'équipement et le récepteur.
- Brancher l'équipement sur un circuit différent de celui sur lequel le récepteur est branché.
- Consulter le détaillant ou un technicien expérimenté en radio/télévision pour de l'aide.

Cet équipement est conforme aux limites d'exposition aux rayonnements FCC et IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20cm de distance entre la source de rayonnement et votre corps. Cet appareil ne doivent pas être placés à côté de ou fonctionner en conjonction avec toute autre antenne ou transmetteur.

Industry Canada (IC)

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions
suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

WEEE Directive 2012/19/EC Waste

Electrical and Electronic Equipment Directive

The correct disposal of end-of-life equipment will help prevent potential negative consequences for the environment and human health. Dispose of the packaging and this product in an authorized collection or recycling center. Do not dispose of the unit with domestic refuse. Do not incinerate.

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For more information: www.inncom.com

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