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Dallas, Texas, USA

INDOOR AIR QUALITY

COMMERCIAL INDOOR AIR QUALITY SENSOR REPLACEMENT KIT

508350-01
03/2023

INSTALLATION INSTRUCTIONS FOR COMMERCIAL INDOOR AIR QUALITY SENSORS REPLACEMENT KIT (25B37)



- CORE Unit Controller with W4 Communication Module 1
- Lennox® CORE Service Application Used for adding IAQ Sensors to the CORE Control System..... 1
- Indoor Air Quality Sensor..... 1
- Commercial IAQ Sensor Button and LED Indicators..... 2**
- IAQ Sensor Dimensions 2**
- Status Indicator Light Color Descriptions 2
- Sensor Replacement Procedure..... 2**
- Removing and Installing Sensor(s) from Unit 2
 - A-Box Sensor Locations* 2
 - B-Box Sensor Locations* 2
 - C-Box Sensor Locations* 3
- Removing Failed Sensor(s) from CORE Control System using the CORE Service App. 3
- Adding New Sensor(s) to CORE Control System using the CORE Service App..... 3
- IAQ Sensor Alarm Codes..... 3**
- FCC Compliance Statement 4**
- FCC RF Exposure Information 4**

! IMPORTANT

Improper installation, adjustment, alteration, service or maintenance can cause personal injury, loss of life, or damage to property.

Installation and service must be performed by a licensed professional installer (or equivalent) or a service agency.

! IMPORTANT

Take care not to drop the IAQ Sensor during unpacking. Dropping device could result in damage to internal components which could render it unusable.

! IMPORTANT

Unpacking required. Remove all protective packing material from the assembly. Packing material should be disposed of properly.

KEEP OUT OF REACH CHILDREN

! WARNING



Electric Shock Hazard. Can cause injury or death. Unit must be properly grounded in accordance with national and local codes.

Line voltage is present at all components when unit is not in operation on units with single-pole contactors. Disconnect all remote electric power supplies before opening access panel. Unit may have multiple power supplies.

! CAUTION

Sharp edges hazard. Sharp edges can cause injuries. Use protective gloves when grasping equipment edges.

Shipping and Packing List

Package 1 of 1 contains:

- 1 - Commercial Wireless IAQ Sensor (for installation in either the discharge or return air locations of unit)
- 1 - Warranty and Installation instruction

Overview

The wireless system employs the following components:

CORE UNIT CONTROLLER WITH W4 COMMUNICATION MODULE

- Plenum-rated Bluetooth Low Energy (BLE) antenna which will assist in boosting the signal from Communication Module to:
 - » CORE Service App
 - » Wireless Commercial IAQ sensors
- Return air mounted antenna reduces signal loss from roof and connected to gateway system via coax cable.

LENNOX® CORE SERVICE APPLICATION USED FOR ADDING IAQ SENSORS TO THE CORE CONTROL SYSTEM

- Connects to the Lennox® CORE Unit Controller through the W4 Communication Module.
- Used for installation of wireless sensors, service, and maintenance of applicable rooftop units.

Table of Contents

- Shipping and Packing List 1
- Overview 1



0323

508350-01

INDOOR AIR QUALITY SENSOR

Used to measure PM2.5 and TVOC counts in return and discharge air locations.

- Two sensors are required per roof top unit
- Units are powered by 24VAC only
- Wireless only

Commercial IAQ Sensor Button and LED Indicators

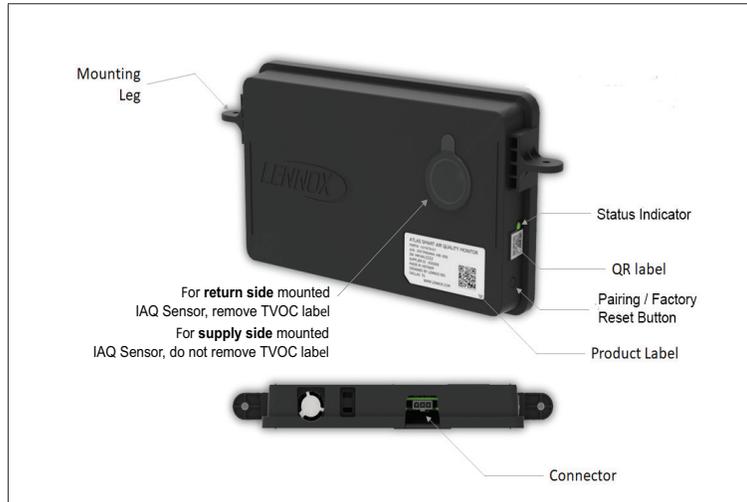


Figure 1. Wireless Sensor Button and Status Indicator

IAQ Sensor Dimensions

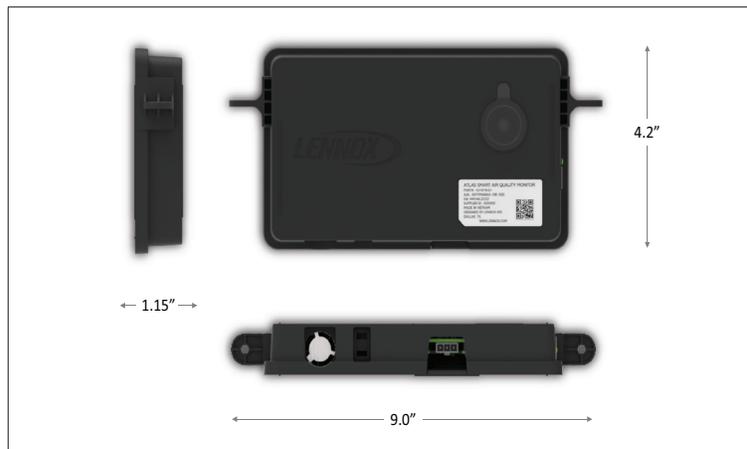


Figure 2. Wireless Sensor Dimensions

STATUS INDICATOR LIGHT COLOR DESCRIPTIONS

NOTE: Light is only on when there is an issue with signal strength.

Table 1. Status Indicator - Two Color Descriptions

Function	Light Color	Description
Normal	Solid Green	Solid green indicates device is functioning properly.
Pairing	Flashing Blue	Flashing blue indicates the unit is in pairing mode.
Communication Error	Solid Red	Solid red indicates lost communication error.
Other Errors	Flashing Red	PM Sensor error
	Flashing Green	Low signal strength
	Solid Blue	VOC Sensor error

Sensor Replacement Procedure

REMOVING AND INSTALLING SENSOR(S) FROM UNIT

If a sensor fails, use the following procedures to physically remove the failed sensor from the unit. All units will have two IAQ sensors installed, one in the return air and the second one in the supply side.

The sensors are secured to the tray by two screws. The power cable assembly will need to be detached from the connector located on the bottom of the sensor as well.

A-Box SENSOR LOCATIONS

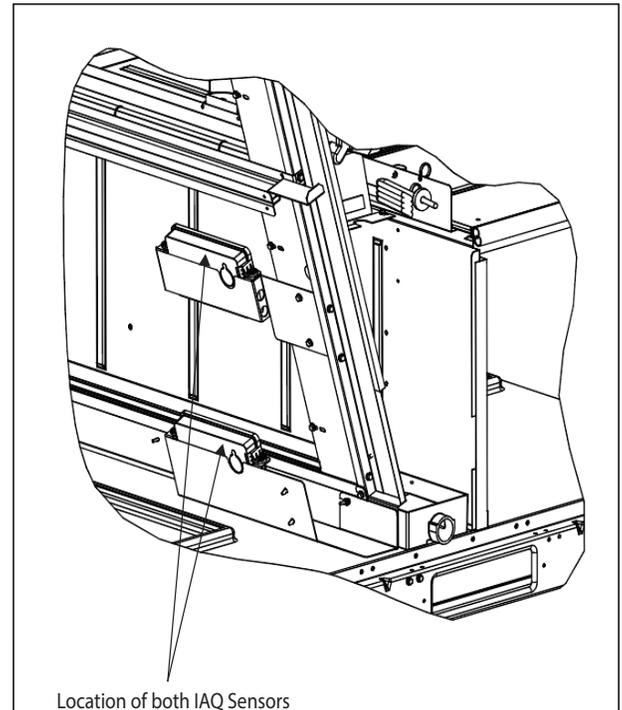


Figure 3. A-Box Wireless Sensor Locations (shown without filter)

B-Box SENSOR LOCATIONS

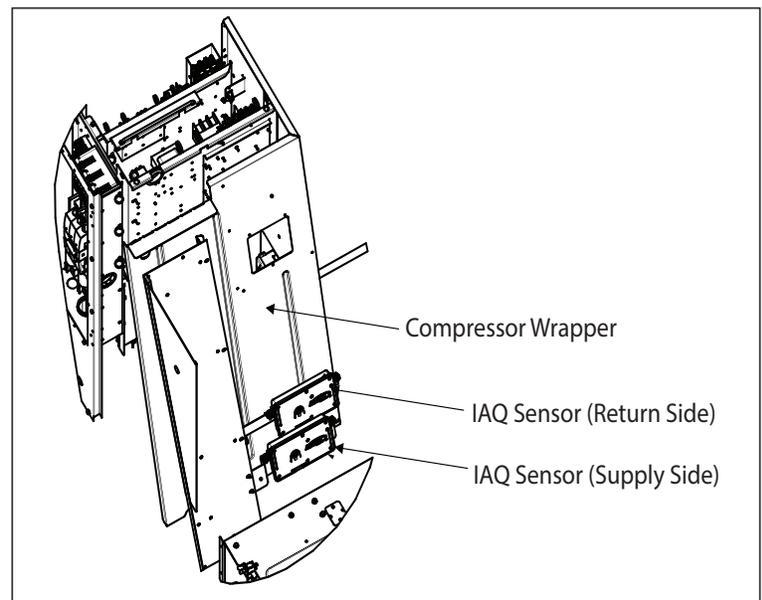


Figure 4. B-Box Wireless Sensor Locations (shown without filter)

C-Box SENSOR LOCATIONS

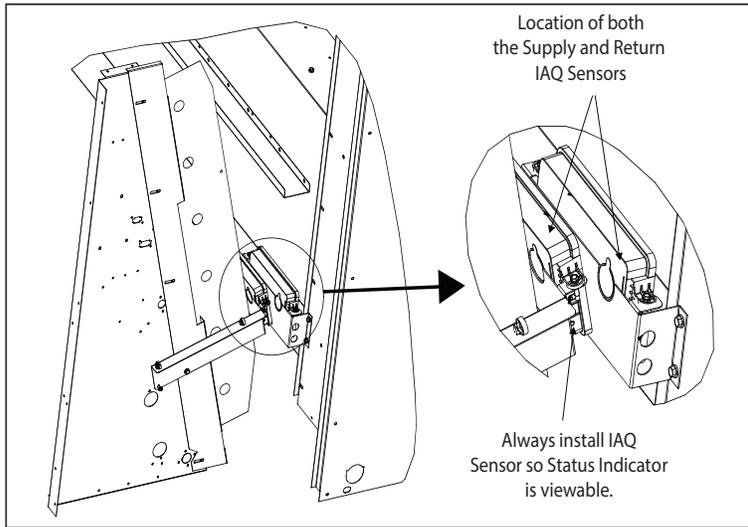


Figure 5. C-Box Wireless Sensor Locations
(shown without filter)

REMOVING FAILED SENSOR(S) FROM CORE CONTROL SYSTEM USING THE CORE SERVICE APP.

The sensor (s) must be removed from the CORE Control System before adding any new sensors. This can be accomplished by using the CORE Service App.

1. Go to **Menu > Network Integrations > Wireless Sensor Network Setup > Wireless Sensor Network**.
2. From the **Network Nodes** list, select the IAQ sensor that is being replaced.
3. On the **Sensor Information Screen**, select the **Remove Sensor** option at the bottom of the screen.
4. Type in the sensor name that is to be removed and select **Proceed**.

ADDING NEW SENSOR(S) TO CORE CONTROL SYSTEM USING THE CORE SERVICE APP

Wireless operation is **ONLY** compatible with M4 Unit Controller. To commission a wireless sensor, you must first pair the **CORE Service App** to the applicable unit.

! IMPORTANT

DO NOT interrupt the adding process of the wireless sensors. If interrupted the sensor will need to be factory-reset.

Maximum of two wireless sensors can be provisioned per unit.

1. Open the CORE Service App and navigate to **Menu > (Setup) Network Integration > Wireless Sensor Network Setup > Wireless Sensor Network**.

NOTE: Provisioning the Wireless Sensor Network is only required once. If you have already completed this step, proceed to step 3. Select *Provision*, and select *NEXT* to proceed. Could take up to two minutes to complete the provisioning. Once "RTU Provisioned" appears on the screen, select *DONE* to proceed.

2. Click **Add node** on the Network Nodes screen. This triggers the CORE Service App to scan for both the WIAQ Return Sensor and WIAQ Discharge Sensor.

NOTE: Turn off any other BLE mesh devices that have not been added yet. Only one sensor can be added at a time.

3. Follow the prompts on the screen to finish the adding process.
4. Verify that the **CORE Service App** displays the "Node Provisioned" on the Provision Sensor Network.
5. Verify if CORE Service app is showing PM2.5 counts for both return and supply mounted sensors and TVOC counts from return mounted sensor

IAQ Sensor Alarm Codes

Table 2. CORE Control System Alarm and Event Codes (IAQ Sensors)

SELECTED ALARMS (MARKED WITH * IN TABLE RESULT IN THE CLOSURE OF THE SERVICE RELAY CONTACTS (DO1).

ALARM CODE	DISPLAY MESSAGE	EVENT ACTION
522	WCS	The W4 lost connection with all WCS sensors
523	WIAQ RETURN SENSOR ERROR	Data out of range or internal error with WIAQ return sensor.
524	WIAQ DISCHARGE SENSOR ERROR	Data out of range or internal error with WIAQ discharge sensor.
525	WIAQ RETURN SENSOR COMM	The W4 has lost communication with WIAQ return sensor.
526	WIAQ DISCHARGE SENSOR COMM	The W4 has lost communication with WIAQ discharge sensor
527	WIAQ GENERAL ERROR	Alarming value gives indication of what caused alarm. There are currently 3 possible alarming values. <ul style="list-style-type: none"> • Alarming value of 0 means too many WIAQ sensors detected (there can only be 2). • Alarming value of 1 means too many WIAQ return sensors detected (there can only be 1). • Alarming value of 2 means too many WIAQ discharge sensors were detected (there can only be 1).

FCC Compliance Statement

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.
2. This device must accept any interference received, including interference that may cause undesired operation.

NOTE: *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 it is not installed and used in accordance with the instruction manual, it 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 their own expense.*

MODIFICATIONS:

Any modifications made to this device that are not approved by Lennox International may void the authority granted to the user by the FCC to operate this equipment.

FCC RF Exposure Information

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm during normal operation.