



LG
Life's Good

Installation Manual for LG CO2 Sensor

Model Number: PESC0RV0



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Please read carefully and store in a safe place for future reference.
Content familiarity required for proper installation.**

The instructions included in this manual must be followed to prevent product malfunction, property damage, injury, or death to the user or other people. Incorrect operation due to ignoring any instructions will cause harm or damage. The level of seriousness is classified by the symbols described by the summary list of safety precautions on page 3.

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SAFETY PRECAUTIONS

The instructions below must be followed to prevent product malfunction, property damage, injury or death to the user or other people. Incorrect operation due to ignoring any instructions will cause harm or damage. The level of seriousness is classified by the symbols described below.

TABLE OF SYMBOLS

 DANGER	<i>This symbol indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.</i>
 WARNING	<i>This symbol indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.</i>
 CAUTION	<i>This symbol indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.</i>
Note	<i>This symbol indicates situations that may result in equipment or property damage accidents only.</i>
	<i>This symbol indicates an action should not be completed.</i>

INSTALLATION

WARNING

All electrical work must be performed by a licensed electrician and conform to local building codes or, in the absence of local codes, with the National Electrical Code, and the instructions given in this manual.

If the power source capacity is inadequate or the electric work is not performed properly, it may result in fire, electric shock, physical injury or death.

Do not touch the CO2 sensor's PCB, any exposed wiring, terminals, or other electrical components with tools or exposed skin when the power is connected. Only qualified technicians should install, remove, or re-install the sensor.

Improper installation or use may result in fire, electric shock, physical injury or death.

Do not install, remove, or re-install the unit by yourself (end user). Ask the dealer or an authorized technician to install the unit.

Improper installation by the user may result in fire, electric shock, physical injury or death.

For replacement of an installed sensor, always contact an authorized LG service provider.

There is risk of fire, electric shock, and physical injury or death.

Do not install the sensor in a highly humid environment or where it can be exposed to rain.

There is risk of physical injury or death due to electric shock.

Safely dispose of the packing materials.

Tear apart and throw away plastic packaging bags so that children may not play with them and risk suffocation and death.

Note

Only qualified technicians should install, remove, or re-install the sensor.

Improper installation or use may result in product malfunction.

Do not drop the sensor.

It may damage the case.

Do not install the sensor in a highly humid environment or where it can be exposed to rain.

There is risk of product malfunction.

SAFETY PRECAUTIONS

OPERATION

DANGER

Do not provide power to or operate the sensor if it is flooded or submerged. Always have the dealer or an authorized technician to service the sensor.

There is risk of fire, electric shock, physical injury or death.

Do not store or use flammable gas or combustibles near the sensor.

There is risk of fire, explosion, and physical injury or death.

WARNING

Do not install the CO₂ sensor (or its hard-wired and extension cables) in a location exposed to open flame or extreme heat. Do not touch the sensor with wet hands.

There is risk of fire, electric shock, physical injury or death.

Do not modify or extend the power supply cord.

There is risk of fire, electric shock, physical injury or death.

CAUTION

Only authorized persons should operate the product.

If the sensor is not operated properly, there is a risk of physical injury.

Note

Do not the sensor to get wet.

There is risk of unit failure or malfunction.

Do not drop the CO₂ sensor.

There is risk of unit failure or malfunction.

Only authorized persons should operate the CO₂ sensor.

There is risk of unit failure or malfunction.

INTRODUCTION, PARTS LIST, AND SPECIFICATIONS

Introduction

The CO2 sensor is especially designed to work in conjunction with LG Energy Recovery Ventilators (ERVs). Real-time CO2 levels are detected and displayed on the sensor's LCD. The CO2 sensor then sends the data to the LG ERV via the hard-wired connection cable coupled with the supplied 33-foot extension cable. LG ERVs, using stand-alone embedded logic, will respond to CO2 changes in the surrounding ambient air by applying demand control ventilation when its fan is set to Auto mode. Energy efficiency is increased, and indoor air quality can be improved when ventilation air is introduced to the monitored space only as necessary.

Note

The CO2 sensor does not work with interlock or slave operation with indoor units.

Factory-Supplied Parts

Figure 1: CO2 Sensor (Model No. PES-C0RV0).

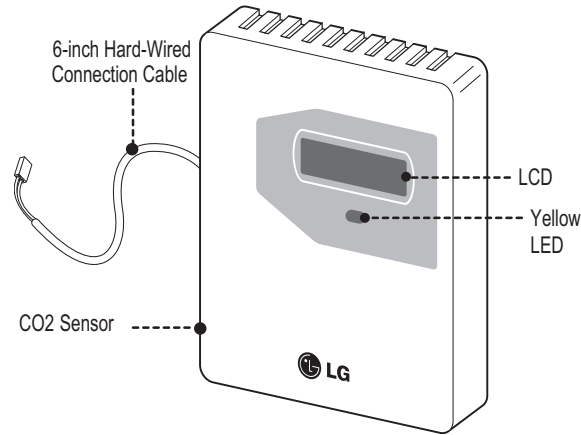
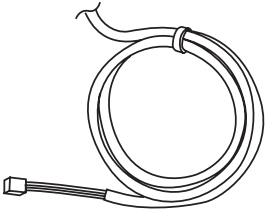
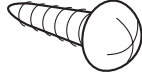
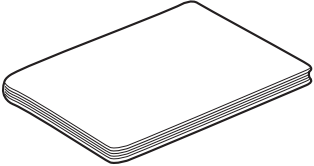


Table 1: Factory-Supplied Parts Table.

Part	Quantity	Image
33-foot Extension Cable	One (1)	
Mounting Screws	Three (3)	
Installation Manual	One (1)	

Installation

Specifications

Table 2: Specifications Table.

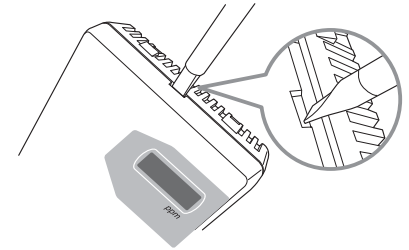
Specifications	
For Use With	ARVU053-063ZEA2 and ARVU093-123ZFA2 LG Energy Recovery Ventilators (ERV)
Power Supply	12V DC \pm 5%
Analog Output	0 to 5V DC
Measuring Range	0 to 2,000 ppm
Dimensions	4-1/16" H x 3-1/4" W x 1-1/4" D
Net Weight	4 oz. (CO2 Sensor with its 6-inch Hard-Wired Cable Only)
Shipping Weight	Approximately 1 lb.

INSTALLATION AND WIRING

1. Open the Case.

To open CO2 sensor case, insert a flat-head screwdriver in the slot (see right), and gently twist.

Figure 2: Removing the Cover.



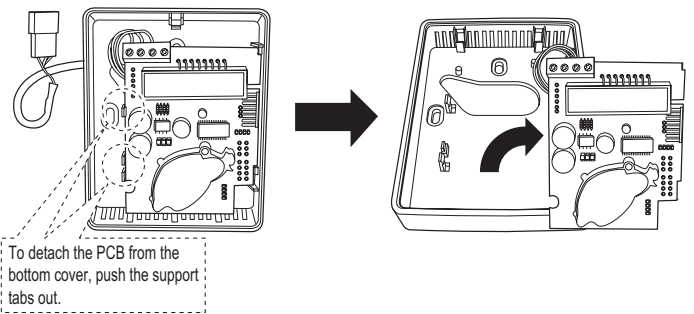
2. Remove the CO2 sensor Printed Circuit Board (PCB).

The installer needs to remove the PCB attached to the bottom part of the case before wall-mounting the CO2 sensor. To detach, push the support tabs out that are holding the PCB, lift the PCB up, and remove.

Note

To avoid damaging the CO2 sensor PCB, place it in a clean secure location while the backplate is being installed.

Figure 3: Push the Support Tabs Out.



3. Choose an installation location for the CO2 sensor.

General Dos

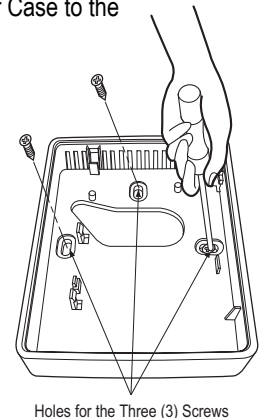
The CO2 sensor should be installed:

- In an occupied space that has air exchange from the ERV
- Where it can accurately detect the CO2 level of the space
- Four (4) to five (5) feet above the floor where its LED display can be read easily (if CO2 sensor monitoring is required; possibly near the zone controller)
- In an area with good air circulation
- Where the CO2 sensor is within reach of the ERV with the one (1) factory-supplied 33-foot extension cable

General Don'ts

- Do not install the CO2 sensor near or in:
 - Drafts or dead spots behind doors and in corners
 - An open window

Figure 4: Attaching the CO2 Sensor Case to the Wall.



4. Wall-mount the CO2 sensor.

Using the bottom part of the case as a template, mark the area on the wall where the three (3) factory-supplied screws and the access hole for the hard-wired connection cable should go. Drill the holes, then attach the bottom of the CO2 sensor case securely to the wall.

5. Reinsert the PCB and reattach the cover.

After wiring is complete (see Wiring), place the right side of the PCB under the guides on the case. Gently push the left side of the PCB under the support tabs until it snaps in place, indicating it is secure.

Position the three guides (on the cover) at the bottom of the case, then push down on the top until the two hooks snap in place.

Figure 5: CO2 Sensor PCB.



Wiring

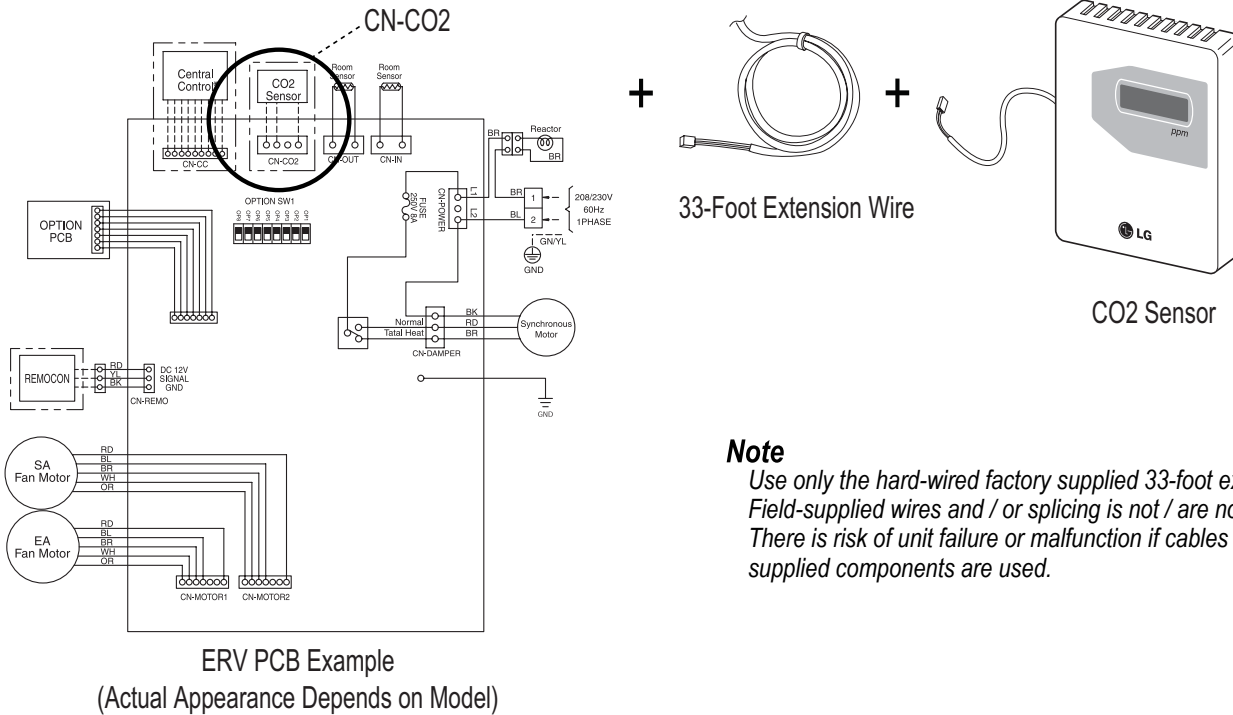
The CO2 sensor PCB has a hard-wired connection cable ending in a female terminal. The factory-supplied 33-foot male extension cable connects this cable to the CN-CO2 terminal on the ERV PCB. No splicing or additional connections are required.

WIRING PROCEDURE, OPERATION, AND TROUBLESHOOTING

Wiring Procedure

1. Power down the ERV.
2. Attach one male end of the extension cable to the female connection on the hard-wired cable.
3. Attach the other male end of the extension cable to the CN-CO2 terminal on the ERV Main PCB.
4. Reattach the CO2 sensor PCB to the bottom of the case (that has already been wall-mounted).

Figure 6: Wiring from ERV PCB to CO2 Sensor.



Note

Use only the hard-wired factory supplied 33-foot extension wire. Field-supplied wires and / or splicing is not / are not permitted. There is risk of unit failure or malfunction if cables other than LG supplied components are used.

Installation

Operation

1. At initial power up, a wrench symbol will appear on the LCD and the yellow LED on the CO2 sensor PCB lights up for two (2) to three (3) seconds.
2. Turn ERV on at the zone controller or central controller. Set the ERV fan mode to Auto.
3. The ambient CO2 concentration in parts per million (ppm) will then appear on the LCD. Permit the system to operate for about five [5] minutes before obtaining an accurate reading.
4. The CO2 reading will update every three (3) seconds, using data from the CO2 infrared sensor.
5. ERV fans will automatically operate according to CO2 sensor readings (see table at right).

Table 3: ERV Operation Sequence with CO2 Sensor.

CO2 Sensor Reading	ERV Fan Operation
<500 ppm	Off
500-700 ppm	Low Speed
700-900 ppm	High Speed
>900 ppm	Super High Speed

Troubleshooting

- The wrench symbol displays on the LCD and the yellow LED on the CO2 sensor PCB turns on if there is an error and / or if the reading is outside the measuring range (0 to 2,000 ppm).
- Both the wrench symbol and the yellow LED will turn off when the CO2 sensor returns to normal operation.
- If CO2 readings fluctuate ± 200 ppm, the reading may be unstable.
- If the system has been operating for more than five (5) minutes, and readings continue to be unstable, verify that the CO2 sensor's connections are properly secured.

Contact your local sales representative if you have any questions about the CO2 sensor or its installation.



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