Shipping and Packing List

Package 1 of 1 contains:
1 - CO₂ Sensor With Cover
1 - Mounting Plate
1 - Wiring Diagram

Check contents for shipping damage. Receiving party should contact last carrier immediately if shipping damage is found.

These instructions are intended as a general guide and do not supersede local codes in any way. Authorities having jurisdiction should be consulted before installation.

Options

<table>
<thead>
<tr>
<th>Description</th>
<th>Cat No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO₂ Wall Mount with LCD Display</td>
<td>77N39</td>
</tr>
<tr>
<td>CO₂ Wall Mount No Display</td>
<td>87N53</td>
</tr>
<tr>
<td>CO₂ Wall Mount, Black Case, with Display</td>
<td>87N52</td>
</tr>
<tr>
<td>CO₂ Wall Mount, Black Case No Display</td>
<td>87N54</td>
</tr>
</tbody>
</table>

Installation

**NOTICE**

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a licensed professional installer (or equivalent) or service agency.

Mounting Bracket & Sensor

1. Make the appropriate wiring preparations.
2. Use the mounting bracket as a template to mark mounting holes or mount to a junction box.
3. Run the wiring through the mounting bracket and make necessary wire connections.
4. Mount the sensor on the mounting bracket; a “snap” sound will indicate that the sensor is secure. Secure the sensor to the mounting bracket with the supplied setscrew. The sensor will now have power. After a 1 minute warm-up, the sensor will stabilize and output the current CO₂ readings.

Wiring Instructions

The location and connections to the Lennox rooftop units with the Unit Controller are shown in figures 1 and 2.

Figure 1. Field Wiring
(150’ [46m] or shorter runs)

Figure 2. Field Wiring
(150’ [46m] or longer runs)
The connections to the Lennox rooftop units without the Unit Controller are shown in figure 3.  

<table>
<thead>
<tr>
<th>Sensor Terminal Block</th>
<th>024-072</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Signal ground</td>
<td>A6-AQ1</td>
</tr>
<tr>
<td>8. 0-10V output</td>
<td>A6-AQ1</td>
</tr>
<tr>
<td>1. AC Input/DC+</td>
<td>TB1-R (24VAC)</td>
</tr>
<tr>
<td>2. AC Ground/DC</td>
<td>TB1-C (24VAC GND)</td>
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</table>

A6 - Enthalpy Control Located on Economizer Assembly

<table>
<thead>
<tr>
<th>Sensor Terminal Block</th>
<th>090-300</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Signal ground</td>
<td>J3-5 A6-AQ1</td>
</tr>
<tr>
<td>2. 0-10V output</td>
<td>J3-4 A6-AQ1</td>
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<tr>
<td>1. AC Input/DC+</td>
<td>TB1-A1 (24VAC)</td>
</tr>
<tr>
<td>2. AC Ground/DC</td>
<td>TB1-C (24VAC GND)</td>
</tr>
</tbody>
</table>

J3 - Located next to Economizer Assembly

Figure 3. Field Wiring for KC/KG/KH and T-Class® units without Unit Controller

For applications that require the Lennox CO2 sensor interface to a non-Lennox controller, please refer to controller manufacturer’s instructions.

Use 18 AWG copper wire.

Data Logging: If data logging is desired, the output terminals #6 and #7 (4-20 mA) may be used with a field-provided data logging device.

NOTE - The CO2 sensor must be connected to the Unit Controller or economizer control assembly if the third-party controller cannot provide damper control.

ABC Logic™ Self Calibration System

This feature allows the sensor to continually recalibrate itself when the indoor CO2 concentrations drop to outside levels while the building is unoccupied. A building must be unoccupied for 4 hours or more for this self-calibration system to operate properly. Under these conditions, ABC Logic™ should maintain sensor calibration over the lifetime of the sensor. The ABC Logic™ should be turned OFF where a building is continuously occupied 24 hours per day, or where there could be significant sources of non-occupant related CO2 such as greenhouses, breweries and other industrial and food processing applications.

Specifications

- Sensing Method—Non-dispersive infrared (NDIR) absorption, gold-plated optics, patented ABC Logic self calibration algorithm.
- Measurement Range—0-2000 ppm (0 ppm = 0V, 4mA).
- Accuracy—400 - 1250 ppm +/-3% of reading; 1250 - 2000 ppm +/-5% of reading +30 ppm.
- Stability—< 2% of FS over life of sensor (15 yr typical).
- Warm-up Time—< 2 minutes (operational) 10 minutes (max accuracy).
- Operating Conditions—0 - 50ºC (32 - 122ºF) 0 - 95% RH, non-condensing.
- Storage Conditions—-40 - 70ºC (-40 - 158ºF).
- Output (Analog)—0 - 10V (100 ohms output impedance) & 4 - 20 mA (RL max 500 ohms) available simultaneously
- Output (Digital)—EIA-232 communicates.
- Power Supply Req'ts—18 - 30 VAC RMS, 50/60Hz.
- Temperature Dependence—0.2% FS per ºC (+/-0.11% per ºF).
- Pressure Dependence—0.135% of reading per mm Hg.
- Certifications—CE and RoHS compliant.
- Signal Update—Every 5 seconds.
- Flammability Classification—UL94 5 VA.
- Thermistor Type—NTC 10 K ohm thermistor with 1 K ohm resistor in series.
- Power Consumption—Typical 0.7 W at nominal voltage of 24 V AC RMS.

This product is covered by one or more of the following patents:

5,650,624 / 5,721,430 / 5,444,249 / 5,747,808 / 5,834,777 / 5,163,322 / 5,340,986 / 5,502,308 / 6,344,798 / 6,023,069 / 5,370,114 / 5,601,079 / 5,691,704 / 5,767,776 / 5,966,077 / 6,107,925 / 5,798,700 / 5,945,924 / 5,592,147 / 6,255,653 / 6,250,133 / 6,285,290