SYSTEM OVERVIEW
• The iHarmony® Zoning System is capable of controlling up to four separate zones
• Zone dampers are automatically controlled to supply air flow only to zones with a demand
• Individual air volumes for heating or cooling are available to each zone
• Round or rectangular dampers can be used
• Zoning system allows temperature setback in unoccupied areas while maintaining comfort in occupied areas
• Auto-changeover control from any zone sensor or control heating/cooling mode to all zones from the iComfort® Communicating Thermostat (Zone 1 master)

EQUIPMENT WARRANTY
• iHarmony® Damper Control Module and iHarmony® Zone Sensors:
  • Limited five year limited warranty in residential applications
  • Limited one year in non-residential installations
NOTE - Refer to Lennox Equipment Limited Warranty certificate included with unit for specific details.

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iComfort® S30
Ultra-Smart Wi-Fi
Communicating Thermostat required.
Not furnished - Order separately.

COMPONENTS AND EQUIPMENT
System Components
• iHarmony® Damper Control Module (DCM)
• iComfort® Thermostat (Zone 1 master)
• iHarmony® Zone Sensor (one per Zone, 2, 3 and 4)
• Motorized Zone Dampers
• Discharge Air Temperature Sensor (furnished)
NOTE - All components must be ordered separately.
• Damper Control Module and Zone Dampers are powered by a separate stand-alone transformer

Outdoor Units
• SL18XC1 Single Stage Air Conditioner (two zones)
• SL18XP1 Single Stage Heat Pump (two zones)
• XC21 Two-Stage Air Conditioner (up to four zones)
• XP21 Two-Stage Heat Pump (up to four zones)
• XC20/XC25 Variable Capacity Air Conditioner (up to four zones)
• XP20/XP25 Variable Capacity Heat Pump (up to four zones)

Variable Speed Furnaces
• EL296V Two-Stage
• SL280V Two-Stage
• SL297NV Two-Stage
• SLP98V Variable Capacity

Variable Speed Air Handlers
• CBA38MV

NOTE - The iHarmony Zoning System may be used with all iComfort® Communicating indoor/outdoor units shown above. A conventional, non-communicating outdoor unit may also be used as long as the indoor unit is one of the iComfort® Communicating models shown above.

NOTE - Only iComfort® Communicating heat pump outdoor units may be used with a dual-fuel system.
IHARMONY® DAMPER CONTROL MODULE (DCM)

• Microprocessor controlled panel contains all necessary relays and controls to operate the system
• Automatic reset in case of operation error or power failure
• Diagnostic codes are sent to and stored directly on the iComfort® Communicating Thermostat and are displayed on the Alerts screen

• If a zoning-related alert occurs the system defaults to Zoning Off mode (all dampers open)
• LEDs on control indicate RSBus communication (green), status (green), Zone Sensor communication (green), damper closed operation (red), Zoning Off operation (red) and pressure switch open (red)
• Transformer jumper allows the use of an external transformer (DMPR XFMR) to power the Damper Control Module (DCM), Zone Sensors and Zone Dampers, or use the system transformer on the indoor unit (SYS XFMR) to power only the Damper Control Module (DCM) and Zone Sensors
• Default setting is the external transformer (DMPR XFMR)

TRANSFORMER JUMPER SETTINGS

<table>
<thead>
<tr>
<th>Component</th>
<th>Power (DMPR XFMR)</th>
<th>Power (SYS XFMR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Damper Control Module</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Zone Sensors</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Zone Dampers</td>
<td>Yes</td>
<td>¹ No</td>
</tr>
</tbody>
</table>

¹ Power to zone dampers must be supplied by a separate external transformer.

• Terminal (G) for continuous IAQ blower operation
• Adjusts the indoor blower air volume from continuous blower speed to the correct zone heating or cooling blower speed when any zone has a heating or cooling demand
• Built-in time delay function (5 minutes) prevents short cycling of system
• 3A (slow-blow) fuse protects panel from short circuits in the thermostat and damper field wiring
• Case and removable cover constructed of high impact plastic
• Holes for mounting are furnished and electrical inlets are provided in case
• Dimensions (H x W x D): 6 x 9-1/4 x 2 in. (152 x 235 x 51 mm)
• Shipping weight: 2 lbs.
• Power requirements: 24VAC (18-30VAC)

DISCHARGE AIR TEMPERATURE SENSOR (furnished)

• Field installed in supply air plenum.
• Senses discharge air temperature to control system.
• Relays information through the Damper Control Module to iComfort® Communicating Thermostat to control first and second stage heating and cooling based on discharge air temperature. The temperature settings are controlled by the iComfort® Communicating Thermostat.

ICOMFORT® THERMOSTATS

iComfort® S30 Ultra-Smart Wi-Fi Thermostat (part of the iComfort® Residential Communicating Control System)
• Recognizes and connects to all iComfort® Communicating products to automatically configure and control the heating/cooling system (based on user-specified settings) for the highest level of comfort, performance and efficiency
• Recognizes model and serial number information for iComfort® Communicating products to simplify system setup
• Wi-Fi remote temperature monitoring and adjustment through a home wireless network for desktop PCs, laptops and apps for smartphones or tablets
• Smart home automation compatible with Apple HomeKit™, Amazon Alexa®, Google Assistant and IFTTT
• Service alerts and reminders sent via text message or e-mail
• Dealer Dashboard features online real-time monitoring of installed iComfort® Communicating systems
• Simple easy-to-use touchscreen allows complete system configuration
• Scheduled maintenance alerts, system warnings and troubleshooting are also displayed on thermostat screen
• Easy to read 7 inch high definition color display (measured diagonally)
• Installer setup screens allow quick and simple system configuration without a manual, Installer can also run tests on complete system or individual components for easy maintenance and troubleshooting
• Serial communications bus (RSBus), with less wiring than a conventional heating/cooling system, allows system communication
• Uses 4-wire, 18-gauge standard thermostat wiring
• High Definition Color Display, Mag-Mount, Smart Hub Controller, wallplate (for retrofit installations) furnished for easy installation

NOTE - See the iComfort® S30 Thermostat Product Specifications bulletin in the Controls section for more information.
ICOMFORT® THERMOSTATS (continued)

Outdoor Temperature Sensor
• Used with the iComfort® Communicating Thermostat
• When installed outdoors, sensor allows thermostat to display outdoor temperature
• Sensor is auto-detected when connected to thermostat

NOTE - Sensor is required for dual-fuel and Enhanced Dehumidification Control (EDA) applications.

NOTE - The outdoor sensor is furnished as standard with iComfort® Communicating outdoor units, optional for conventional units.

ZONE SENSOR
• Programming and mode of operation for each Zone Sensor is configured and controlled by the iComfort® Communicating Thermostat
• Easy to read 4.3 in. color screen (measured diagonally)
• Touchscreen interaction
• Displays current zone temperature in center of screen, indoor humidity, mode of operation and current zone setpoint (COOL TO / HEAT TO)
• Displays °F or °C depending on settings at the iComfort® Communicating Thermostat
• Displays languages (English, French or Spanish) depending on settings at the iComfort® Communicating Thermostat

Menu Button:
• Notifications:
  • Displays any alerts from the iComfort® Communicating Thermostat
• User Settings:
  • General
    • About (Information about model and serial numbers, and hardware/software revisions)
    • Screen Lock (prevents tampering with thermostat settings)
• Display:
  • Screen Saver (On/Off)
  • Screen Brightness (Slide control allows screen brightness adjustment -0 to 100%)
• Advanced Settings (Installer Only):
  • Zone Number (2 to 4)
  • Reset (restores factory setting)
  • Restart (reboots sensor)
• Temperature measurement range: 32 to 99°F
• Dimensions (H x W x D): 3-5/16 x 4-5/16 x 7/8 in. (84 x 110 x 22 mm)
• Friction lock wiring connections
• Connects directly to the Damper Control Module (RSBus) using standard 4-wire, 18-gauge thermostat wiring (field supplied)
• Backplate with mounting hardware is furnished
• Wall plate (H x W): 4-1/2 x 5-3/4 in. (114 x 1461 mm) to cover an existing installation is furnished with wall anchors and screws for mounting
• Zone Sensor is easily removed from backplate
**ADDITIONAL CONTROLS**

Freezestat
- Only required for small zones with minimal airflow
- Installed on indoor coil

High Pressure Switch
- A high pressure switch is required for applications with a heat pump
- Guards against high head pressures during first- and second-stage heating

Transformer
- 24VAC transformers are required for operation of the Damper Control Module, Zone Sensors and Zone Dampers
- The Damper Control Module requires 6VA and the Zone Sensors require 3VA
- These can be powered by a separate external transformer or the system (indoor unit) transformer
- Transformer size is determined by the total power requirements of the Damper Control Module, Zone Sensors and Zone Dampers
- Zone Dampers will require a separate 24V transformer
- Additional (extended) zone dampers require additional transformers
- Zone Damper VA can vary from 6 to 12VA each. See damper manufacturer’s specifications to determine total VA required
- See page 8 for transformer ordering information

**DAMPERS**

Zone Dampers
- Any style 24VAC damper is compatible with the iHarmony Zoning System
- Spring-open/power-close dampers are the preferred, however, power-open/spring-close and power-open/power-close dampers can be used

**NOTE** - Modulating dampers may not be used.
- At least one damper per zone is required
- Up to 5 dampers per zone may be connected in parallel to the iHarmony® Damper Control Module, not to exceed a total of six dampers for entire system
- If additional dampers are required, refer to the special wiring diagram in the Installation Instructions for additional information about extended dampers, transformers and zone relays
**SYSTEM COMPONENTS**

- **iComfort® Communicating Air Conditioner or Heat Pump** (or conventional non-communicating outdoor unit, not for Dual Fuel Systems)
- **iComfort® Communicating Furnace or Air Handler**
- **Conventional Wiring**
- **RSBus**

**LEGEND**
- **RSBus**
- **Conventional Wiring**

**SYSTEM ARCHITECTURE**

- **iComfort® Smart Hub Controller**
- **iComfort® S30 High Definition Color Display with Mag-Mount Mounting System (Master Zone 1)**
- **Damper Control Module (DCM)**
- **24V Transformer (See System Components Ordering)**
- **High Pressure Switch (Heat Pump Only)**
- **Freezestat (Indoor Coil)**
- **Discharge Air Temperature Sensor (DATS)**

**ZONES**

- **Zone 2 Zone Sensor**
- **Zone 3 Zone Sensor**
- **Zone 4 Zone Sensor**

**ZONE DAMPERS**

- **Zone 1 Damper**
- **Zone 2 Damper**
- **Zone 3 Damper**
- **Zone 4 Damper**

**EXTRA ZONE DAMPERS**

- **Extended Zone 1 Dampers**
- **Extended Zone 2 Dampers**
- **Extended Zone 3 Dampers**
- **Extended Zone 4 Dampers**

**OTHER COMPONENTS**

- **iComfort® S30 Web and Mobile Apps**
- **iComfort® Smart Hub Controller**
- **iComfort® S30 High Definition Color Display with Mag-Mount Mounting System (Master Zone 1)**
- **24V Transformer (See System Components Ordering)**

**OTHER FEATURES**

- **iComfort® S30 High Definition Color Display with Mag-Mount Mounting System (Master Zone 1)**
- **iComfort® Smart Hub Controller**
- **iComfort® S30 Web and Mobile Apps**
- **iComfort® S30 High Definition Color Display with Mag-Mount Mounting System (Master Zone 1)**
- **24V Transformer (See System Components Ordering)**

**Additional 24V Transformers for Extended Zone Dampers**
### Component Type | Type of Connection | Terminal Designation | Terminal Description
---|---|---|---
Damper Transformer (DMPR XFMR) | 2-wire | R  C | Power
  | | | Common
Discharge Air Temperature Sensor (DATS) | 2-wire | C  Sense | Sensor
  | | | Power
Freezestat | 2-wire | Sense  24VAC | Power
IAQ Blower (G) | 2-wire | Sense  24VAC | Power (not used)
Zone Sensors (Zones 2, 3 and 4) | RSbus (4-wire) | PWR  D+  D–  C | Power
  | | | RSBus Data Send
  | | | RSBus Data Receive
  | | | Common
Indoor Unit (INDOOR) | RSbus (4-wire) | R  I+  I–  C | Power
  | | | RSBus Data Send
  | | | RSBus Data Receive
  | | | Common
Pressure Switch (PRESSURE SW) | 2-wire | DCOM  NC  NO | Common
  | | | Normally Closed
  | | | Normally Open
ZONE DAMPERS (Zones 1 - 2) (Zones 3 - 4) | 2-wire | DCOM  NC  NO | Power
  | | | RSBus Data Send
  | | | RSBus Data Receive
  | | | Common
  | | | Normally Closed
  | | | Normally Open
When power is first applied, the green Status LED will flash, indicating that the Damper Control Module (DCM) is functioning normally.

When the control is first powered on, there is a 5-minute minimum off-time delay during which only the fan output will respond.

**HEAT/COOL CHANGEOVER**

When a demand for heating or cooling exists in one zone and an opposing demand is made from another zone, a 20-minute time period is initiated. If the original demand is not satisfied within the 20-minute time period, the original demand will be interrupted, turning the equipment off and initiating a 5 minute time delay to allow system temperatures and pressures to stabilize. The opposing demand will then be initiated.

This cycle will continue until there are no simultaneous opposing demands.

**DAMPER OPERATION**

**Cooling Operation Conventional Heat/Cool and Heat Pump Systems**

When a Zone Sensor makes a demand for cooling, the zone damper opens and cooling operation begins. Cooling demand is terminated when:

1. All zone demands for cooling are satisfied.
2. The demand has exceeded the heat/cool changeover time limit (20 minutes) while a heating demand exists.

When cooling demand is terminated, a 5-minute minimum off time delay is initiated.

Second-stage cooling is energized when the discharge air temperature is 7°F higher than the setpoint of the cooling stage temperature setpoint on the iComfort® Communicating Thermostat.

**Heating Operation Conventional Heat/Cool and Heat Pump Systems**

When a Zone Sensor makes a demand for heating, the zone damper opens and heating operation begins. Heating demand is terminated when:

1. All zone demands for heating are satisfied.
2. The demand has exceeded the heat/cool changeover time limit (20 minutes) while a cooling demand exists.

When heating demand is terminated, a 5 minute minimum off time delay is initiated.

Second-stage heating is energized when the discharge air temperature is lower than the setpoint of the heating stage temperature setpoint on the iComfort® Communicating Thermostat.

**DUAL-FUEL OPERATION**

**NOTE** - Only iComfort® Communicating heat pump outdoor units may be used with a dual-fuel system.

When a gas furnace and a heat pump are both present in the system, the iComfort® Communicating Thermostat uses the balance point settings to determine which source to use for heating.

When the outdoor temperature is above the low balance point, heat pump operation is always initiated first before gas furnace operation.

In order to use the gas furnace as a primary heating source (not defrost tempering) when the outdoor temperature is between the high and low balance points, the following conditions must occur:

- Heat pump operation must occur for a minimum of 30 minutes.
- Temperature in the zone must not increase by more than 0.5° F.
- Heat pump has not entered defrost mode in the 30 minute period.

If any single-zone is satisfied at the specified conditions, heat pump operation will stop and the gas furnace will be used to satisfy all heating demands for the next duration of the parameter heat pump lockout time. After the heat pump lockout has expired, the heat pump is again used as the primary heat source on the next demand after the equipment has stopped.

**Emergency Heat Operation Heat Pump Systems**

When emergency heat is enabled on the iComfort® Communicating Thermostat the indoor unit satisfies all heating demand with electric backup heat (gas heat if a dual fuel system is used). When the Emergency Heat setting is OFF, the heat pump is used to satisfy heating demands.

**Humiditrol® Whole Home Dehumidification Operation**

The Humiditrol Whole-Home Dehumidification System can be used with the iHarmony® Zoning System.

When a Humiditrol is installed it is enabled through the iComfort® Communicating Thermostat.

See the iComfort® Communicating Thermostat Product Specifications for details.
<table>
<thead>
<tr>
<th>Description</th>
<th>Catalog No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>iComfort® S30 Ultra-Smart Wi-Fi Thermostat (Zone1 Master)</td>
<td>12U67</td>
</tr>
<tr>
<td>1 Optional Outdoor Air Temperature Sensor</td>
<td>X2658</td>
</tr>
<tr>
<td>Damper Control Module (DCM) (Discharge Air Temperature Sensor furnished)</td>
<td>10C16</td>
</tr>
<tr>
<td>Zone Sensor - One per zones 2, 3 and 4</td>
<td>17A30</td>
</tr>
<tr>
<td>Transformors</td>
<td></td>
</tr>
<tr>
<td>120/208/240V primary / 24V secondary - 40VA (3 dampers)</td>
<td>10P17</td>
</tr>
<tr>
<td>120/208/240V primary / 24V secondary - 50VA (4 dampers)</td>
<td>10P87</td>
</tr>
<tr>
<td>120/208/240V primary / 24V secondary - 75VA (6 dampers)</td>
<td>12P61</td>
</tr>
<tr>
<td>4 in. square Electrical Box</td>
<td>83P74</td>
</tr>
<tr>
<td>2 High Pressure Switch - Heat Pump only</td>
<td>27W13</td>
</tr>
<tr>
<td>Freezestats - For use with Humiditrol system</td>
<td>3/8 in. (Open 29°F / Close 58°F) 93G35</td>
</tr>
<tr>
<td>Dampers</td>
<td></td>
</tr>
<tr>
<td>Zone Control</td>
<td></td>
</tr>
<tr>
<td>Power Close / Spring Open</td>
<td></td>
</tr>
<tr>
<td>Round - Two Wire</td>
<td></td>
</tr>
<tr>
<td>6 in. Round</td>
<td>X4207</td>
</tr>
<tr>
<td>7 in. Round</td>
<td>X4208</td>
</tr>
<tr>
<td>8 in. Round</td>
<td>X4209</td>
</tr>
<tr>
<td>9 in. Round</td>
<td>X4210</td>
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<tr>
<td>Rectangular Bottom Mount - Two Wire</td>
<td></td>
</tr>
<tr>
<td>8 in. x 10 in.</td>
<td>X4252</td>
</tr>
<tr>
<td>8 in. x 12 in.</td>
<td>X4253</td>
</tr>
<tr>
<td>8 in. x 14 in.</td>
<td>X4254</td>
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<td>8 in. x 16 in.</td>
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<td>8 in. x 18 in.</td>
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<td>8 in. x 20 in.</td>
<td>X4257</td>
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<tr>
<td>8 in. x 22 in.</td>
<td>X4258</td>
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<tr>
<td>8 in. x 24 in.</td>
<td>X4259</td>
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<tr>
<td>10 in. x 12 in.</td>
<td>X4260</td>
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<tr>
<td>10 in. x 14 in.</td>
<td>X4261</td>
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<tr>
<td>10 in. x 16 in.</td>
<td>X4262</td>
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<tr>
<td>Rectangular Side Mount - Two Wire</td>
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<tr>
<td>8 in. x 8 in.</td>
<td>X4216</td>
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<tr>
<td>10 in. x 8 in.</td>
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<td>12 in. x 8 in.</td>
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<tr>
<td>14 in. x 8 in.</td>
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<tr>
<td>16 in. x 8 in.</td>
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<tr>
<td>18 in. x 8 in.</td>
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<tr>
<td>20 in. x 8 in.</td>
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<tr>
<td>22 in. x 8 in.</td>
<td>X4223</td>
</tr>
<tr>
<td>24 in. x 8 in.</td>
<td>X4224</td>
</tr>
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<td>26 in. x 8 in.</td>
<td>X4225</td>
</tr>
<tr>
<td>28 in. x 8 in.</td>
<td>X4226</td>
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<tr>
<td>30 in. x 8 in.</td>
<td>X4227</td>
</tr>
<tr>
<td>10 in. x 10 in.</td>
<td>X4228</td>
</tr>
<tr>
<td>12 in. x 10 in.</td>
<td>X4229</td>
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<tr>
<td>14 in. x 10 in.</td>
<td>X4230</td>
</tr>
<tr>
<td>16 in. x 10 in.</td>
<td>X4231</td>
</tr>
<tr>
<td>18 in. x 10 in.</td>
<td>X4232</td>
</tr>
</tbody>
</table>

1 The Optional Outdoor Air Temperature Sensor may be used with an iComfort® Communicating outdoor unit for a secondary (alternate) sensor reading. Optional Outdoor Air Temperature Sensor may also be ordered for use with a conventional outdoor unit.

2 Required for Heat Pump applications.
COMPONENT SELECTION

INDOOR UNITS
- Lennox iComfort® Communicating Thermostat Indoor Unit equipped with Variable Speed Blower (Gas Furnace with Indoor Coil or Air Handler Unit)

START

iComfort® S30 Ultra-Smart Communicating Wi-Fi Thermostat (12U67) (Zone 1 Master)

Transformer
120/208/240V primary/24V secondary
40VA (10P17)
50VA (10P87)
75 VA (12P61)

Zone Dampers (at least one per zone)

High Pressure Switch (Heat Pump applications only)
R-410A - (27W13)

Freezestats 3/8 in. (93G35)

OUTDOOR UNITS

Two Zones
- Lennox iComfort® Communicating Single-Stage Air Conditioner or Heat Pump Outdoor Unit (For system with two equal size zones)

Two, Three or Four Zones
- Lennox iComfort® Communicating Variable Capacity or Two-Stage Air Conditioner or Heat Pump Outdoor Unit (For two, three or four zone systems)

iComfort® S30 Ultra-Smart Communicating Wi-Fi Thermostat (12U67) (Zone 1 Master)

1 A conventional, non-communicating outdoor unit may also be used as long as the indoor unit is iComfort® Communicating.

NOTE - Dual Fuel Systems - Only iComfort® Communicating heat pump outdoor units may be used with a dual fuel system.
<table>
<thead>
<tr>
<th>Sections</th>
<th>Description of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Features</td>
<td>New iHarmony Zone Sensor Display.</td>
</tr>
</tbody>
</table>

NOTE - Due to Lennox’ ongoing commitment to quality, Specifications, Ratings and Dimensions subject to change without notice and without incurring liability.
Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury.
Installation and service must be performed by a qualified installer and servicing agency.

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