



**RESIDENTIAL
PRODUCT SPECIFICATIONS**



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

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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 Lennox® S30 Smart 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.

COMPONENTS AND EQUIPMENT

System Components

- iHarmony® Damper Control Module (DCM)
- Lennox® S30 Smart 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

- EL18XCV / SL28XCV / XC20
Variable Capacity Air Conditioner (up to four zones)
- EL18XPV / SL25XPV / XP20
Variable Capacity Heat Pump (up to four zones)
- XC21 Two-Stage Air Conditioner (up to four zones)
- XP21 Two-Stage Heat Pump (up to four zones)

Variable Speed Furnaces

- EL296V Two-Stage
- SL280V Two-Stage
- SL297NV Two-Stage
- SLP99V Variable Capacity

Variable Speed Air Handlers

- CBA38MV

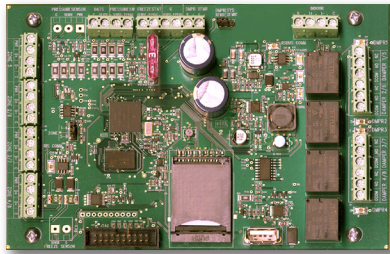
NOTE - The iHarmony Zoning System may be used with all Lennox® Communicating indoor/outdoor units shown above. A conventional, non-communicating outdoor unit may also be used as long as the indoor unit is one of the Lennox® Communicating models shown above.

NOTE - Equipment Interface Module (EIM) is required for non-communicating dual-fuel applications.

FEATURES

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 Lennox® S30 Smart 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

Component Power	DMPR XFMR (external-default)	SYS XFMR (indoor unit)
Damper Control Module	Yes	Yes
Zone Sensors	Yes	Yes
Zone Dampers	Yes	¹ No

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 the Lennox® S30 Smart Thermostat to control first and second stage heating and cooling based on discharge air temperature. The temperature settings are controlled by the Lennox® S30 Smart Thermostat.

LENNOX® COMMUNICATING THERMOSTAT

S30 Smart Wi-Fi Thermostat (part of the Lennox® Residential Communicating Control System)

- Recognizes and connects to all Lennox® 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 Lennox® 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
- Service Dashboard features online real-time monitoring of installed Lennox® 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)
- Conventional outdoor units (not Lennox® Communicating) can easily be added and controlled by the Lennox® S30 Smart Thermostat
- 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, standard thermostat wiring
- High Definition Color Display with Subbase, Smart Hub Controller, wallplate (for retrofit installations) furnished for easy installation



NOTE - See the S30 Smart Thermostat Product Specifications for more information.

FEATURES

LENNOX® COMMUNICATING THERMOSTAT (continued)

Outdoor Temperature Sensor

- Used with the Lennox® 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 Lennox® Communicating outdoor units, optional for conventional units.

ZONE SENSOR

- Programming and mode of operation for each Zone Sensor is configured and controlled by the Lennox® S30 Smart Thermostat
- Easy to read 4.3 in. color screen (measured diagonally)
- Touchscreen interaction
- Displays current zone temperature in center of screen, indoor humidity and current zone setpoint (COOL TO / HEAT TO)
- Displays °F or °C depending on settings at the Lennox® S30 Smart Thermostat
- Displays languages (English, French or Spanish) depending on settings at the Lennox® S30 Smart Thermostat



Menu Button:

- Notifications:
 - Displays any alerts from the Lennox® S30 Smart 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):
 - Reset (restores factory setting)
 - Restart (reboots sensor)
 - Temperature measurement range: 32 to 99°F
 - Zone Sensors operate on 12VDC
 - 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

FEATURES

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

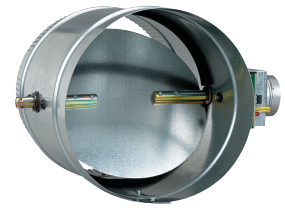
Transformer

- 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

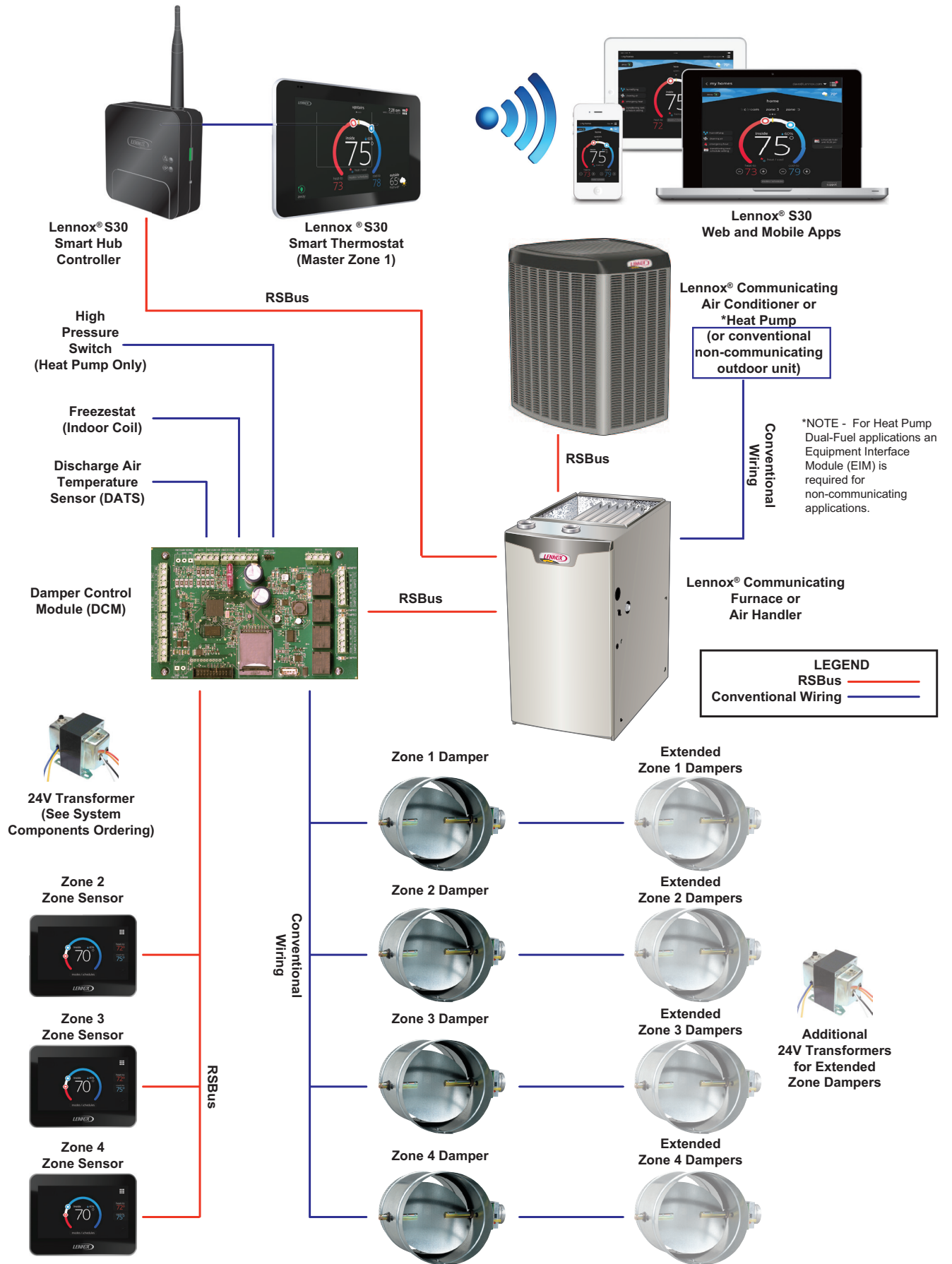
- Any style 24VAC damper is compatible with the iHarmony Zoning System
- Spring-open/power-close dampers are the preferred, however, power-open/spring-close and power-open/power-close dampers can be used



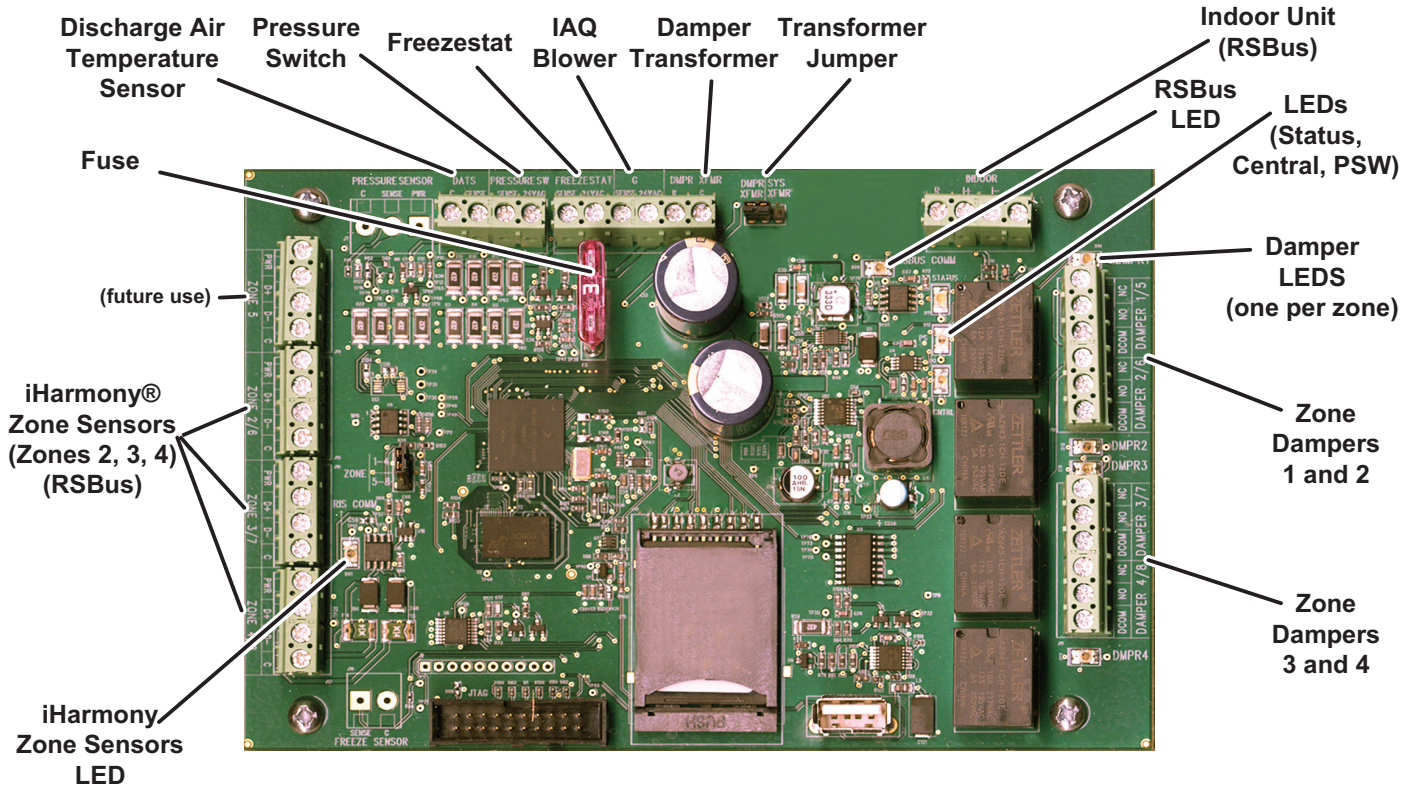
NOTE - Modulating dampers may not be used.

- 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



DAMPER CONTROL MODULE CONNECTIONS



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	Common Sensor
Freezestat	2-wire	Sense 24VAC	Sensor Power
IAQ Blower (G)	2-wire	Sense 24VAC	Sensor 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	Sense 24VAC	Sensor Power
ZONE DAMPERS (Zones 1 - 2) (Zones 3 - 4)	2-wire	DCOM NC NO	Common Normally Closed Normally Open

SEQUENCE OF OPERATION

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 Lennox® S30 Smart 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 Lennox® S30 Smart Thermostat.

DUAL-FUEL OPERATION

NOTE - Equipment Interface Module (EIM) is required for non-communicating dual-fuel applications.

When a gas furnace and a heat pump are both present in the system, the Lennox® S30 Smart 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 Lennox® S30 Smart 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 Lennox® S30 Smart Thermostat.

See the Lennox® S30 Smart Thermostat Product Specifications for details.

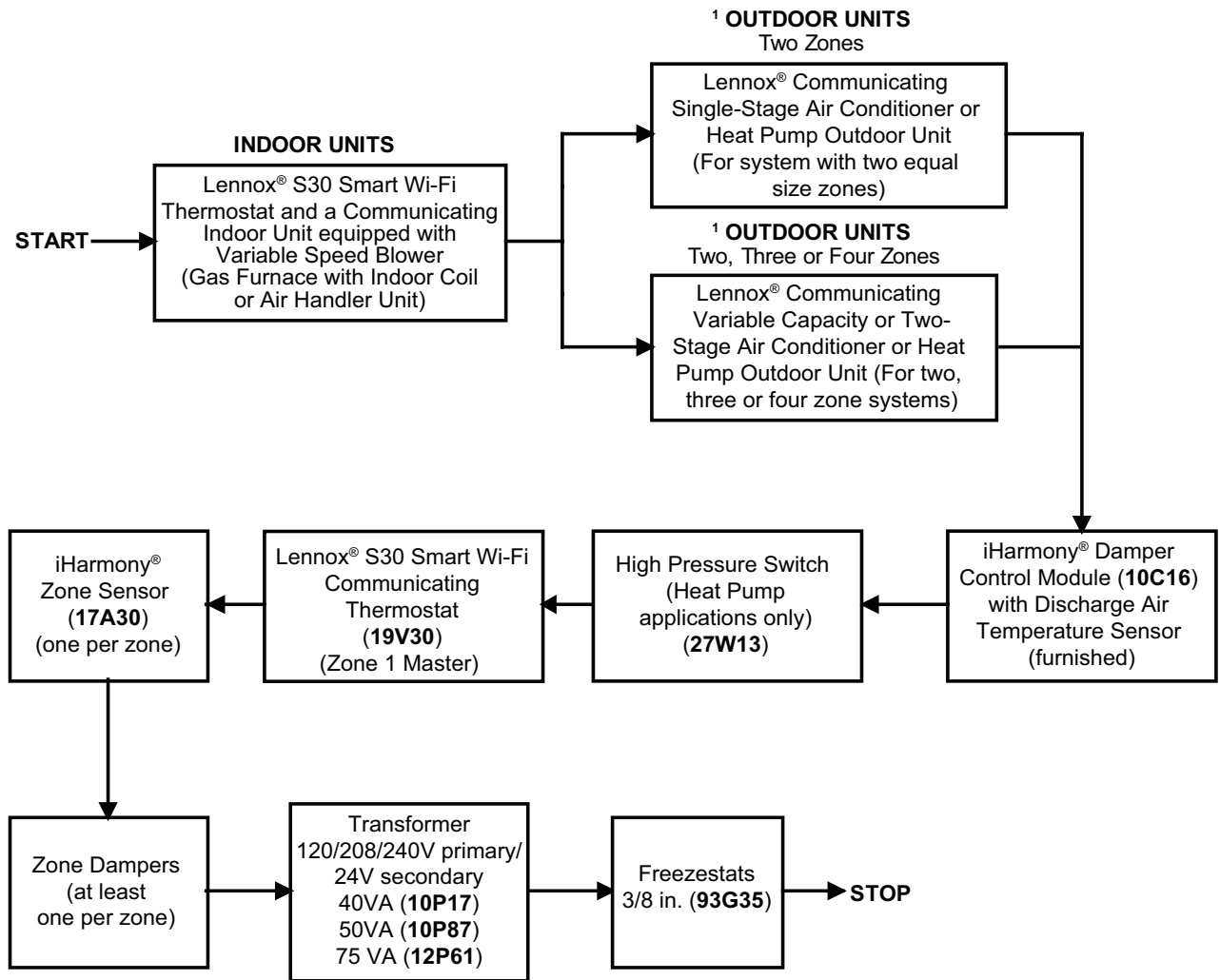
SYSTEM COMPONENTS ORDERING

Description		Catalog No.		
S30 Smart Wi-Fi Thermostat (Zone1 Master)		19V30		
¹ Optional Outdoor Air Temperature Sensor		X2658		
Equipment Interface Module (EIM) - Required for Dual-Fuel Heat Pump Systems		22X18		
Damper Control Module (DCM) (Discharge Air Temperature Sensor furnished)		10C16		
Zone Sensor - One per zones 2, 3 and 4		17A30		
Transformers	120/208/240V primary / 24V secondary - 40VA (3 dampers)	10P17		
	120/208/240V primary / 24V secondary - 50VA (4 dampers)	10P87		
	120/208/240V primary / 24V secondary - 75VA (6 dampers)	12P61		
	4 in. square Electrical Box	83P74		
² High Pressure Switch - Heat Pump only		27W13		
Freezestats - For use with Humiditrol system		93G35		
Dampers	Round -	3/8 in. (Open 29°F / Close 58°F)		
	Zone Control			
Power Close / Spring	Open			
Rectangular Bottom Mount - Two Wire	6 in. Round	X4207	10 in. Round	X4211
	7 in. Round	X4208	12 in. Round	X4213
	8 in. Round	X4209	14 in. Round	X4214
	9 in. Round	X4210	16 in. Round	X4215
	8 in. x 10 in.	X4252	10 in. x 18 in.	X4263
	8 in. x 12 in.	X4253	10 in. x 20 in.	X4264
	8 in. x 14 in.	X4254	10 in. x 22 in.	X4265
	8 in. x 16 in.	X4255	10 in. x 24 in.	X4266
	8 in. x 18 in.	X4256	12 in. x 14 in.	X4267
	8 in. x 20 in.	X4257	12 in. x 16 in.	X4268
	8 in. x 22 in.	X4258	12 in. x 18 in.	X4269
	8 in. x 24 in.	X4259	12 in. x 20 in.	X4270
	10 in. x 12 in.	X4260	12 in. x 22 in.	X4271
	10 in. x 14 in.	X4261	12 in. x 24 in.	X4272
10 in. x 16 in.	X4262			
Rectangular Side Mount - Two Wire	8 in. x 8 in.	X4216	20 in. x 10 in.	X4233
	10 in. x 8 in.	X4217	22 in. x 10 in.	X4234
	12 in. x 8 in.	X4218	24 in. x 10 in.	X4235
	14 in. x 8 in.	X4219	26 in. x 10 in.	X4236
	16 in. x 8 in.	X4220	30 in. x 10 in.	X4238
	18 in. x 8 in.	X4221	12 in. x 12 in.	X4239
	20 in. x 8 in.	X4222	14 in. x 12 in.	X4240
	22 in. x 8 in.	X4223	16 in. x 12 in.	X4241
	24 in. x 8 in.	X4224	18 in. x 12 in.	X4242
	26 in. x 8 in.	X4225	20 in. x 12 in.	X4243
	28 in. x 8 in.	X4226	22 in. x 12 in.	X4244
	30 in. x 8 in.	X4227	14 in. x 14 in.	X4246
	10 in. x 10 in.	X4228	16 in. x 14 in.	X4247
	12 in. x 10 in.	X4229	18 in. x 14 in.	X4248
14 in. x 10 in.	X4230	20 in. x 14 in.	X4249	
16 in. x 10 in.	X4231	22 in. x 14 in.	X4250	
18 in. x 10 in.	X4232	24 in. x 14 in.	X4251	

¹ The Optional Outdoor Air Temperature Sensor may be used with an Lennox® 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



¹ A conventional, non-communicating outdoor unit may also be used as long as the indoor unit is a Lennox® Communicating model.
NOTE - Equipment Interface Module (EIM) is required for non-communicating dual-fuel applications.

REVISIONS

Sections	Description of Change
Features	Updated to reflect latest product offerings.
Sequence of Operation	Dual-Fuel operation requires Equipment Interface Module (EIM).



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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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