

Residential Communicating Control System Equipment Interface Module (EIM)

Bulletin No. 210662
November 2022
Supersedes October 2020



RESIDENTIAL PRODUCT SPECIFICATIONS

The Equipment Interface Module (EIM) allows a Lennox® Communicating Thermostat to be used with most non-communicating HVAC systems.

The EIM allows most conventional, non-communicating furnaces or air handlers (up to 3 stages heating and 2 stages cooling) to emulate a Lennox® Communicating indoor unit (with reduced communication features).

NOTE - Most conventional outdoor/indoor units and most Lennox® Communicating outdoor units can be used in the system.

NOTE - Not for use with Lennox® Communicating outdoor units with variable capacity.

See table on page 3 for available system configurations.

Additional conventional (not Lennox® Communicating) indoor air quality comfort products (PureAir™ Air Purification System, Healthy Climate® Humidifiers, Humiditrol® Enhanced Dehumidification Accessory, Healthy Climate® Energy/Heat Recovery Ventilators, Healthy Climate® Germicidal Lights) can be added for a complete total-comfort system.

NOTE - A second EIM is required for "smart" ventilation operation with Healthy Climate® Energy/Heat Recovery Ventilators or Fresh Air Damper.

EIM MODULE

- Contains all necessary relays and controls to emulate a Lennox® Communicating indoor unit
- Module has two green LEDs
 - One indicates status and aids in troubleshooting, a second LED indicates active RSBus communication
- Any system alerts/warnings are transmitted to the Lennox® Communicating Thermostat
- Serial communications bus (RSBus), with less wiring than a conventional heating/cooling system, allows system communication
- Uses 4-wire, 18-gauge standard thermostat wiring for connection to the Lennox® Communicating Thermostat
- Conventional thermostat wiring connects the EIM to the non-communicating indoor/outdoor unit equipment
- See System Components on page 2 for additional details

Jumpers are furnished for the following settings:

- Unit Type: IFC (furnace), AHC (air handler) or VENT (ERV/HRV or Fresh Air Damper), default setting is furnace
- Number of Heat Stages (0, 1, 2, 3), default setting is 1 stage
- Heat Pump Capacity (1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 5.0). Default setting is 3.0

NOTE - For non-communicating heat pumps



Terminal Connections

- **Communicating RSBus** - To Lennox® Communicating thermostat:
 - R, I+, I-, C
- **Non-Communicating** - To conventional indoor/outdoor unit:
 - W1, W2, W3, G, Y2, Y1, C, DS, R, H, O, B
- **Dual-Fuel** - To non-communicating heat pump:
 - DFTS, w1-DEF, O, B
- Connections are also furnished for an Outdoor Air Temperature Sensor and Discharge Air Sensor

NOTE - Sensors must be ordered separately.

Outdoor Air Temperature Sensor is furnished as standard with Lennox® Communicating outdoor units.

- Blade-type 3 amp fuse protects module

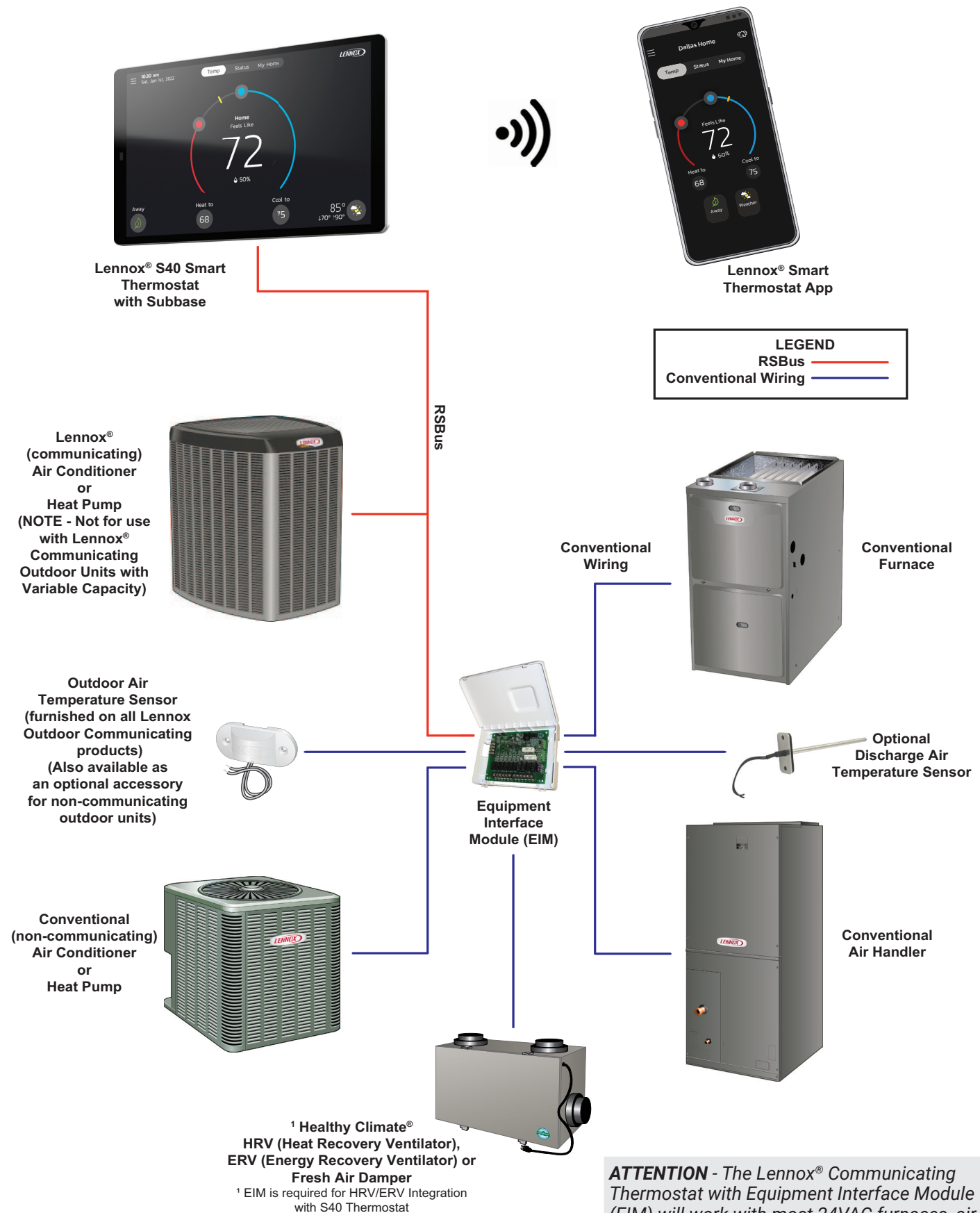
CASE

- Constructed of high impact ABS plastic
- Hinged cover with latching tabs prevents tampering
- Can be mounted on the side of the indoor unit or a nearby stud or wall
- Dimensions (H x W x D): 6-1/8 x 7-1/2 x 1-3/8 in. (156 x 191 x 35 mm)
- Weight: 1 lb.

EQUIPMENT WARRANTY

- Five years in residential installations and one year in non-residential installations
- NOTE - Refer to Lennox® Basic Limited Warranty at www.Lennox.com for additional details.

SYSTEM COMPONENTS



ATTENTION - The Lennox® Communicating Thermostat with Equipment Interface Module (EIM) will work with most 24VAC furnaces, air conditioners, air handlers and heat pumps (up to 3 stages of heat and 2 stages of cooling), **EXCEPT** it will NOT work with any brand of communicating HVAC equipment other than **LENNOX®**.

EQUIPMENT INTERFACE MODULE (EIM) USAGE

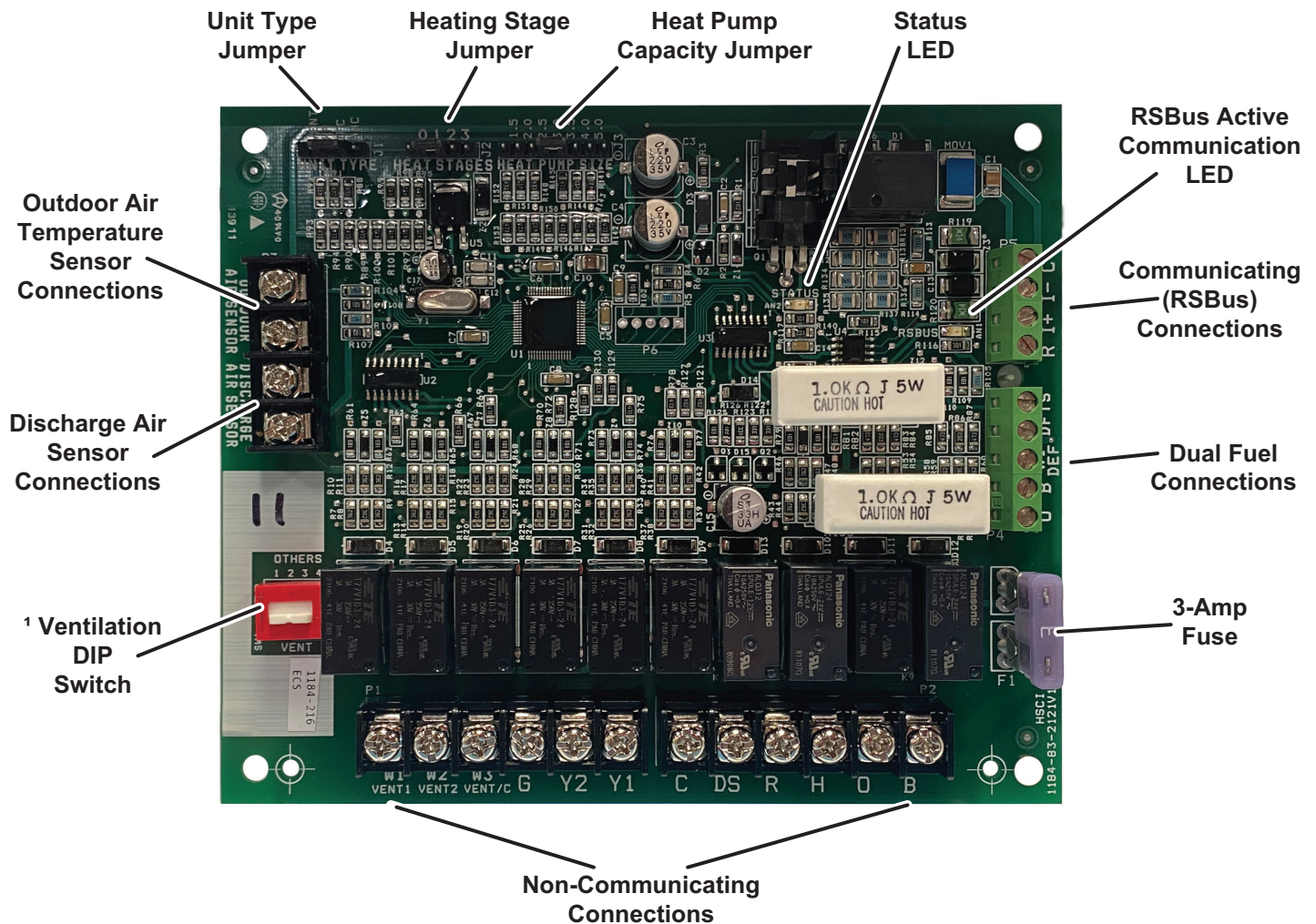
¹ System Type	¹ Outdoor Unit Type (Lennox® Communicating or Non-Communicating)	Indoor Unit Type (Non-Communicating)	² Ventilation ERV/HRV or Fresh Air Damper	³ EIM Required on Indoor Unit	Lennox Communicating Thermostat (required)
Air Conditioner	Either type may be used	Most Furnaces	Yes	Yes	Yes
	Either type may be used	Most Air Handlers	Yes	Yes	Yes
Heat Pump	Either type may be used	Most Furnaces	Yes	Yes	Yes
	Either type may be used	Most Air Handlers	Yes	Yes	Yes

¹ Not for use with Lennox® Communicating outdoor units with variable capacity.

² A second EIM is required for "smart" ventilation operation with Healthy Climate® Energy/Heat Recovery Ventilators or Fresh Air Damper.

¹ Indoor unit must include the Equipment Interface Module (EIM). A non-communicating outdoor unit may be used (but some system features will be reduced).

EIM CONNECTIONS



¹ Only for use when a second EIM is installed for "smart" ventilation operation with Healthy Climate® Energy/Heat Recovery Ventilators or Fresh Air Damper. Refer to the Installation Instructions for additional information.

REQUIRED COMPONENTS

Lennox® S40 Smart Wi-Fi Thermostat (part of the Residential Communicating Control System)

- Recognizes and connects to all Lennox® Communicating Products to automatically configure and control the heating/cooling system (based on homeowner-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 the Lennox Smart Thermostat App for smartphones or tablets
- Smart home automation compatible with Amazon Alexa®, Google Assistant and CONTROL4®
- Service alerts and reminders sent via text message or e-mail
- Service Dashboard features online real-time monitoring of installed Lennox® Communicating thermostats
- 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® S40 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
- Lennox Smart Technician App allows installer to remotely manage systems and testing and also manage refrigerant charge without gauges using Refrigerant Charge Assist
- 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



Remote Outdoor Temperature Sensor

- Used with the Lennox® Communicating thermostats
- When installed outdoors, sensor allows thermostat to display outdoor temperature
- Sensor is auto-detected when connected to thermostat



NOTE - Sensor is required for Humiditrol® applications.

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

OPTIONAL ACCESSORIES

Ventilation Damper

- Constructed of rolled galvanized steel with stiffening ribs to maintain rigidity
- A single steel offset blade is attached to a one piece aluminum shaft connected with nylon bearings for smooth operation
- Spring return with a normally closed or normally open configurations are available
- Requires 24V transformer ordered separately

Transformer

- 120V primary, 24V secondary, 40VA transformer for powering damper

ORDERING INFORMATION

Description	Catalog No.
Equipment Interface Module (EIM)	22X18
Lennox® S40 Smart Thermostat (with Subbase)	22V24
Lennox® Smart Room Sensor	22V25
Lennox® Wireless Extender	22V26
Lennox® Smart Air Quality Monitor	21P02
¹ Optional Outdoor Air Temperature Sensor	X2658
² Discharge Air Temperature Sensor	88K38
Ventilation Damper - 6 in. Normally Closed (NC)	X4152
120/208/240V primary / 24V secondary - 40VA	10P17

¹ Remote Outdoor Temperature Sensor is used with conventional (non-Lennox® Communicating) outdoor units (sensor is furnished with Lennox® Communicating outdoor units). Allows the thermostat to display outdoor temperature. Required in dual-fuel and Humiditrol® applications.

² Optional for indoor air service diagnostics.

NOTE - See the Lennox® S40 Thermostat Product Specifications bulletin for more information

REVISIONS

Sections	Description of Change
Document	Updated usage with S40 Smart Thermostat Added Ventilation control.



Visit us at www.Lennox.com

For the latest technical information, www.LennoxPros.com

Contact us at 1-800-4-LENNOX

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.

©2022 Lennox Industries, Inc.