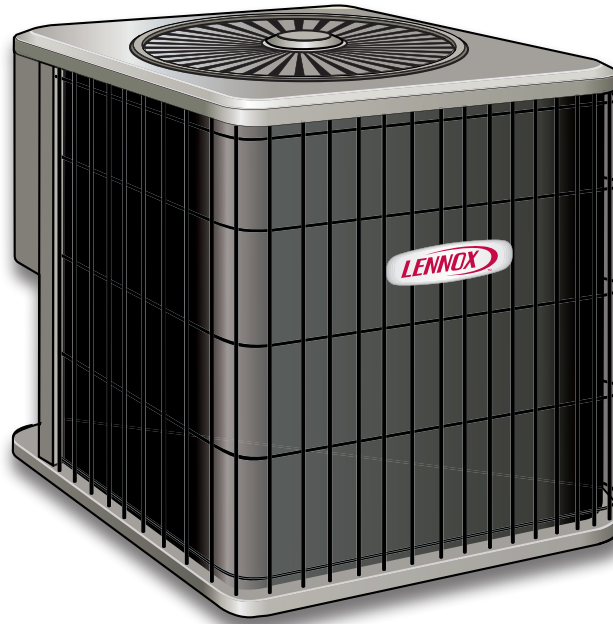




**COMMERCIAL
 PRODUCT SPECIFICATIONS**

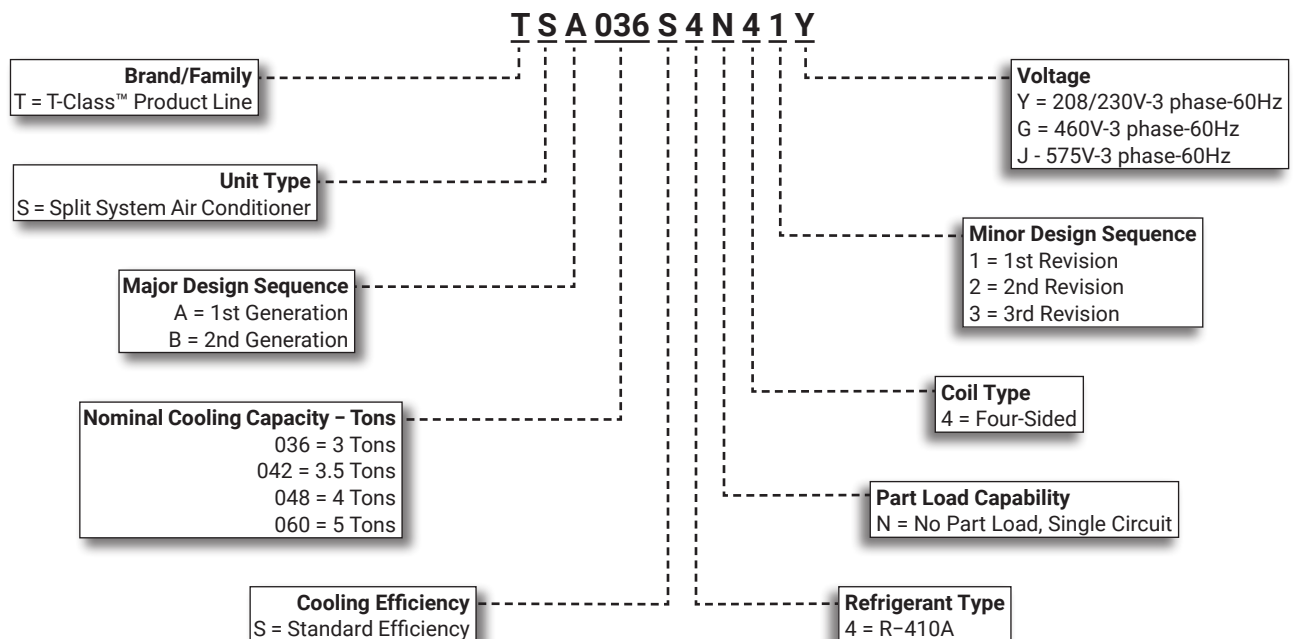
Bulletin No. 210838
 November 2020
 Supersedes May 2020



SEER up to 14.50
3 to 5 Tons

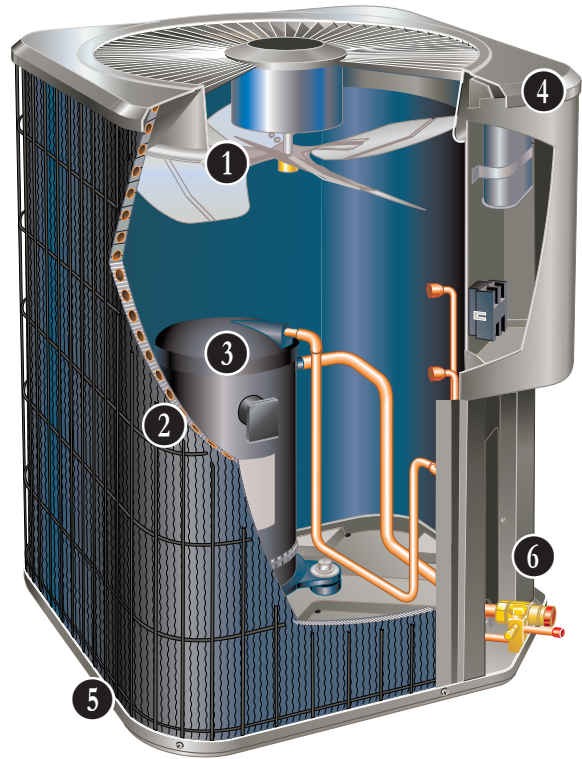
Cooling Capacity - 32,400 to 92,000 Btuh

MODEL NUMBER IDENTIFICATION



FEATURE HIGHLIGHTS

1. Outdoor Coil Fan
2. Copper Tube/Enhanced Fin Coil
3. Scroll Compressor
4. Heavy Gauge Steel Cabinet
5. PermaGuard™ Corrosion Resistant Base
6. Refrigerant Line Connections and Access



CONTENTS

| | |
|---|----|
| Approvals And Warranty | 3 |
| Dimensions | 8 |
| Electrical Data | 7 |
| Features | 3 |
| Installation Clearances | 9 |
| Model Number Identification. | 1 |
| Optional Accessories - Order Separately | 7 |
| Optional Conventional Temperature Control Systems | 6 |
| Sound Data | 9 |
| Specifications | 7 |
| TXV Substitution | 10 |
| TXV Usage. | 10 |

APPROVALS AND WARRANTY

APPROVALS

- AHRI Standard 210/240 certified
- AHRI Certified system match-ups and expanded ratings, visit www.LennoxPros.com
- Sound rated to AHRI Standard 270-2008 test conditions
- Tested in Lennox' Research Laboratory environmental test room environmental test room
- Rated According to U.S. Department of Energy (DOE) test procedures
- Unit and components ETL, NEC and CEC bonded for grounding to meet safety standards for servicing
- ETL certified (U.S. and Canada)
- ISO 9001 Registered Manufacturing Quality System

WARRANTY

- Compressor:
 - Limited five years in non-residential installations
- All other covered components:
 - Limited one year in non-residential installations

NOTE - Refer to Limited Warranty certificate included with unit for specific details.

FEATURES

APPLICATIONS

- 3 through 5 tons
- Three-phase power supply
- Sound levels as low as 76 dBA
- Vertical air discharge
- Applicable to indoor air handlers or gas furnaces with indoor add-on coils
- Shipped completely factory assembled, piped and wired
- Factory test operated

REFRIGERATION SYSTEM

R-410A Refrigerant

- Non-chlorine, ozone friendly
- Unit is factory pre-charged

1 Outdoor Coil Fan

- Direct drive fan
- Vertical air discharge
- Louvered steel top fan guard
- Totally enclosed fan motor
- Rain shield
- Ball bearings
- Inherently protected

High Capacity Liquid Line Drier

- Factory installed in the liquid line
- Drier traps moisture or dirt
- 100% molecular-sieve, bead type

High Pressure Switch

- Protects the system from high pressure conditions
- Manual reset

2 Copper Tube/Enhanced Fin Coil

- Lennox designed and fabricated coil
- Ripple-edged aluminum fins
- Copper tube construction
- Lanced fins for maximum fin surface exposure
- Fin collars grip tubing for maximum contact area
- Flared shoulder tubing connections
- Silver soldering construction.
- Factory tested under high pressure
- Entire coil is accessible for cleaning.
- PVC coated steel wire coil guard with mesh covering furnished

Optional Accessories

Expansion Valve Kits

- Field installed on certain indoor units
- See TXV Usage table
- Chatleff-style fitting

Refrigerant Line Kits

- Refrigerant lines are shipped refrigeration clean
- Lines are cleaned, dried, pressurized and sealed at factory
- Suction line fully insulated
- Lines are stubbed at both ends

NOTE - Not available for 060 models. Must be field fabricated.

FEATURES

COMPRESSOR

3 Scroll Compressor

- High efficiency with uniform suction flow
- Constant discharge flow, high volumetric efficiency and quiet operation
- Low gas pulses during compression reduces operational sound levels
- Compressor motor is internally protected from excessive current and temperature
- Muffler in discharge line reduces operating sound levels
- Compressor is installed in the unit on resilient rubber mounts for vibration free operation



Scroll Compressor Operation

- Two involute spiral scrolls matched together generate a series of crescent-shaped gas pockets between them
- During compression, one scroll remains stationary while the other scroll orbits around it
- Gas is drawn into the outer pocket, the pocket is sealed as the scroll rotates
- As the spiral movement continues, gas pockets are pushed to the center of the scrolls. Volume between the pockets is simultaneously reduced
- When the pocket reaches the center, gas is now at high pressure and is forced out of a port located in the center of the fixed scrolls
- During compression, several pockets are compressed simultaneously resulting in a smooth continuous compression cycle
- Continuous flank contact, maintained by centrifugal force, minimizes gas leakage and maximizes efficiency
- Compressor is tolerant to the effects of slugging and contaminants. If this occurs, scrolls separate, allowing liquid or contaminants to be worked toward the center and discharged

Compressor Crankcase Heater

- Protects against refrigerant migration that can occur during low ambient operation

Optional Accessories

Compressor Sound Cover

- A reinforced vinyl compressor cover containing a 1-1/2 inch thick batt of fiberglass insulation.
- All open edges are sealed with a one-inch wide hook and loop fastening tape.

CABINET

- 4 • Heavy gauge steel cabinet
- Five station metal wash process
- Powder paint finish for superior rust and corrosion protection
- Control box is conveniently located with all controls factory wired
- Corner patch plate allows compressor access
- Drainage holes provided in base section
- 5 • PermaGuard™ Unit Base
- Durable zinc-coated base section resists rust and corrosion
- 6 • Refrigerant Line Connections, Electrical Inlets, Service Valves
- Sweat connection suction and liquid lines
- Located on corner of unit cabinet
- Suction valve can be fully shut off, while liquid valve may be front seated to manage refrigerant charge while servicing system
- Refrigerant line connections and field wiring inlets are located in one central area of cabinet for easy access
- See dimension drawing

Optional Accessories

Hail Guards

- Heavy-gauge steel construction
- Painted to match cabinet
- Surrounds unit on all four sides
- Prevent damage to the coil

Unit Stand-Off Kit

- Black high density polyethylene feet
- Raises unit off mounting surface
- Four feet furnished per order number

FEATURES

CONTROLS

Optional Accessories

L Connection® Network

- Complete building automation control system for single or multi-zone applications
- Options include local interface, software for local or remote communication, and hardware for networking other control functions
- See L Connection Network Product Specifications Bulletin for details.

Compressor Low Ambient Cut-Off Switch

- Non-adjustable switch (low ambient cut-out)
- Prevents compressor operation when outdoor temperature is below 35°F

Compressor Time-Off Control

- Kit prevents compressor short-cycling
- Allows time for suction and discharge pressure to equalize
- Permits compressor start-up in an unloaded condition
- Automatic reset
- Five minute delay between compressor shut-off and start-up

Indoor Blower Off Delay Relay Kit

- Delays indoor blower-off time during the cooling cycle

Low Ambient Kit

- Air conditioners can operate down to 45°F outdoor air temperature without additional controls
- Two low ambient control options are available for field installation:
 1. Low Ambient Control Kit (30°F)
 2. Low Ambient Control (0°F)
Requires Speed Control and Weatherproof Kit (ordered separately). Available for 208/230V models only.

NOTE - Freezestat should be installed on compressors equipped with a low ambient kit.

Freezestat

- Installs on or near the suction line of the indoor coil or on the suction line
- Senses suction line temperature and cycles the compressor off when suction line temperature falls below its setpoint
- Opens at 29°F and closes at 58°F

Thermostat

- For thermostat options, see Optional Conventional Temperature Control Systems on page 6

OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

Comfortsense® 7500 Commercial 7-Day Programmable Thermostat



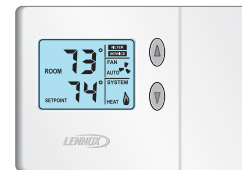
- Four-Stage Heating / Two-Stage Cooling
- Universal Multi-Stage
- Intuitive Touchscreen Interface
- Automatic Changeover between Heating and Cooling
- Full Seven-Day Programming
- Four Time Periods Per Day
- Temperature and Humidity Control
- One-Touch Away Mode
- Holiday Scheduling
- Smooth Setback Recovery (SSR)
- Performance Reports
- Notifications/Reminders
- Dehumidification/Humiditrol® Control for Split Systems and Rooftop Units
- Economizer Relay Control
- Backlit Display
- Wallplate Furnished
- FDD, ASHRAE and IECC Compliant

Comfortsense® 3000 Commercial 5-2 Day Programmable Thermostat



- Two-Stage Heating / Two-Stage Cooling
- Conventional Systems
- Intuitive Interface
- 5-2 Day Programming
- Program Hold
- Remote Indoor Temperature Sensing
- Smooth Setback Recovery (SSR)
- Economizer Relay Control
- Maintenance/Filter/Service Reminders
- Backlit Display
- Wallplate Furnished
- Simple Up and Down Temperature Control

Comfortsense® Non-Programmable Thermostat



- One-Stage Heating / Cooling
- Conventional Systems
- Intuitive Interface
- Manual Changeover
- Backlit Display
- Simple Up and Down Temperature Control

OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

| Description | Catalog No. |
|--|--|
| ComfortSense® 7500 Commercial 7-Day Programmable Thermostat | |
| CS7500 7-Day Thermostat | 17G74 |
| Sensors/Accessories | ² Remote non-adjustable wall-mount 20k 47W36 |
| | ² Remote non-adjustable wall-mount 10k 47W37 |
| | Remote non-adjustable discharge air (duct mount) 19L22 |
| | Outdoor temperature sensor X2658 |
| ComfortSense® 3000 Commercial 5-2 Day Programmable Thermostat | |
| CS3000 5-2 Day Thermostat | 11Y05 |
| Sensors/Accessories | Remote non-adjustable wall mount 10k averaging 47W37 |
| | Thermostat wall mounting plate X2659 |
| ComfortSense® Non-Programmable Thermostat | |
| CS3000 Non-Programmable Thermostat | 51M32 |
| Universal Thermostat Guard with Lock (clear) | |
| | Inside Dimensions (H x W) 5 7/8 x 8 3/8 in. 39P21 |

¹ Up to nine of the same type remote temperature sensors can be connected in parallel.

² Remote wall-mount sensors can be applied in any of the following combinations:

One Sensor - (1) 47W36, Two Sensors - (2) 47W37, Three Sensors - (2) 47W36 and (1) 47W37

Four Sensors - (4) 47W36, Five Sensors - (3) 47W36 and (2) 47W37

SPECIFICATIONS

| General Data | | Model No. | TSA036S4 | TSA042S4 | TSA048S4 | TSA060S4 |
|---|--------------------------------|------------|----------------------------------|--------------|--------------|---------------|
| Nominal Tonnage | | | 3 | 3.5 | 4 | 5 |
| Connections (sweat) | Liquid line o.d. - in. | | 3/8 | 3/8 | 3/8 | 3/8 |
| | Suction line o.d. - in. | | 7/8 | 7/8 | 7/8 | 1-1/8 |
| ¹ Refrigerant (R-410A) furnished | | | 5 lbs. 9 oz. | 6 lbs. 6 oz. | 7 lbs. 8 oz. | 10 lbs. 0 oz. |
| Outdoor Coil | Net face area sq. ft. | Outer coil | 13.22 | 16.33 | 21.00 | 18.67 |
| | | Inner coil | --- | --- | --- | 17.96 |
| | Tube diameter - in. | | 5/16 | 5/16 | 5/16 | 5/16 |
| | Number of rows | | 1 | 1 | 1 | 2 |
| | Fins per inch | | 26 | 26 | 26 | 22 |
| Outdoor Fan | Diameter - in. | | 18 | 22 | 22 | 22 |
| | Number of blades | | 4 | 4 | 4 | 4 |
| | Motor hp | | 208/230V - 1/5 460/575V - 1/6 | 1/4 | 1/4 | 1/4 |
| | Cfm | | 2400 | 3500 | 3670 | 3600 |
| | Rpm | | 1090 | 825 | 825 | 830 |
| | Watts | | 185 | 310 | 295 | 285 |
| | Shipping Data - lbs. 1 package | | | 135 | 178 | 194 |

ELECTRICAL DATA

| Line voltage data - 60 Hz - 3ph | | 208/230V | 460V | 575V | 208/230V | 460V | 208/230V | 460V | 575V | 208/230V | 460V | 575V |
|---|-------------------|----------|------|------|----------|------|----------|------|------|----------|------|------|
| ² Maximum overcurrent protection (MOCP) amps | | 20 | 15 | 15 | 30 | 15 | 30 | 15 | 15 | 35 | 15 | 15 |
| ³ Minimum circuit ampacity (MCA) | | 14.2 | 7.8 | 5.3 | 18.6 | 8.4 | 18.8 | 8.8 | 7.0 | 21.3 | 10.7 | 8.3 |
| Compressor | Rated load amps | 10.4 | 5.8 | 3.8 | 13.5 | 6 | 13.7 | 6.2 | 4.8 | 15.6 | 7.8 | 5.8 |
| | Locked rotor amps | 73 | 38 | 36.5 | 88 | 44 | 83.1 | 41 | 30.4 | 110 | 52 | 35.5 |
| | Power factor | .85 | .84 | .83 | .88 | .83 | .90 | .92 | .88 | .90 | .91 | .90 |
| Condenser Fan Motor | Full load amps | 1.1 | .55 | .55 | 1.7 | 1.0 | 1.7 | 1.0 | 1.0 | 1.7 | 1.0 | 1.0 |
| | Locked rotor amps | 1.9 | 1.1 | 1.1 | 3.1 | 2.3 | 3.1 | 2.3 | 2.3 | 3.1 | 2.3 | 2.3 |

OPTIONAL ACCESSORIES - ORDER SEPARATELY

| | | | | | | | | | |
|--|---------------------------------|-------|---|---|---|---|---|---|---|
| Compressor Low Ambient Cut-Off Switch | 45F08 | | • | | • | | • | | • |
| Compressor Sound Cover | 18J42 | | • | | • | | • | | • |
| Compressor Time-Off Control | 47J27 | | • | | • | | • | | • |
| Freezestat | 3/8 in. tubing | 93G35 | | • | | • | | • | |
| | 5/8 in. tubing | 50A93 | | • | | • | | • | |
| Hail Guards | 24 x 24 x 28 in. | 14X09 | | • | | | | | |
| | 28 x 28 x 28 in. | 14X16 | | | • | | | | |
| | 28 x 28 x 36 in. | 14X14 | | | | • | | | |
| | 28 x 28 x 32 in. | 14X19 | | | | | | • | |
| Indoor Blower Off Delay Relay | 58M81 | | • | | • | | • | | • |
| Loss of Charge Switch | 84M23 | | • | | • | | • | | • |
| ⁴ Low Ambient Kit (Fan Cycling) (30°F) | 34M72 | | • | | • | | • | | • |
| ⁴ Low Ambient Control (0°F) 208/230V only | Speed Control | X5867 | | • | | • | | • | |
| | Weatherproof Kit | 56N41 | | • | | • | | • | |
| Refrigerant Line Sets | L15-65-30, L15-65-40, L15-65-50 | | | • | | | • | | |
| | Field Fabricate | | | | | | | | • |
| Unit Stand-Off Kit | 94J45 | | • | | • | | • | | • |

NOTE - Extremes of operating range are plus 10% and minus 5% of line voltage.

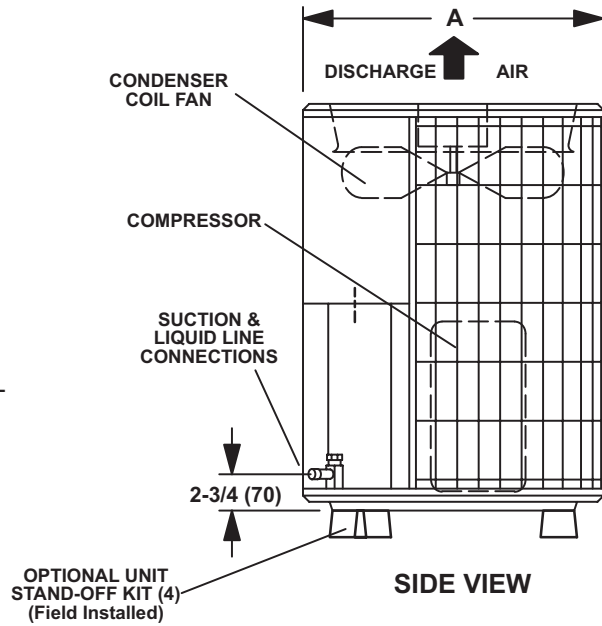
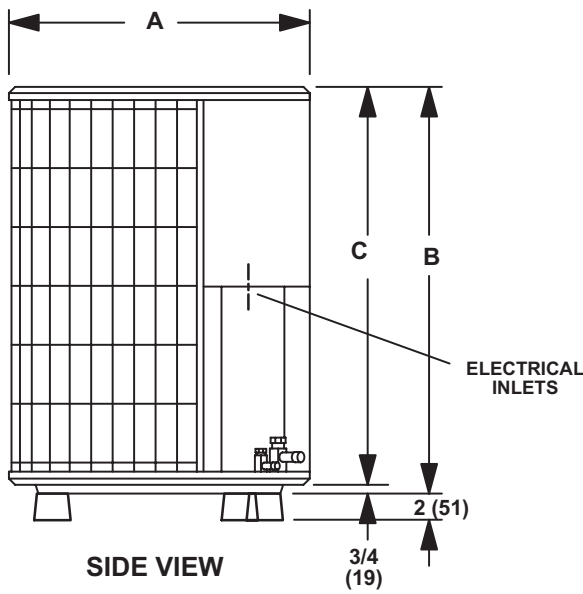
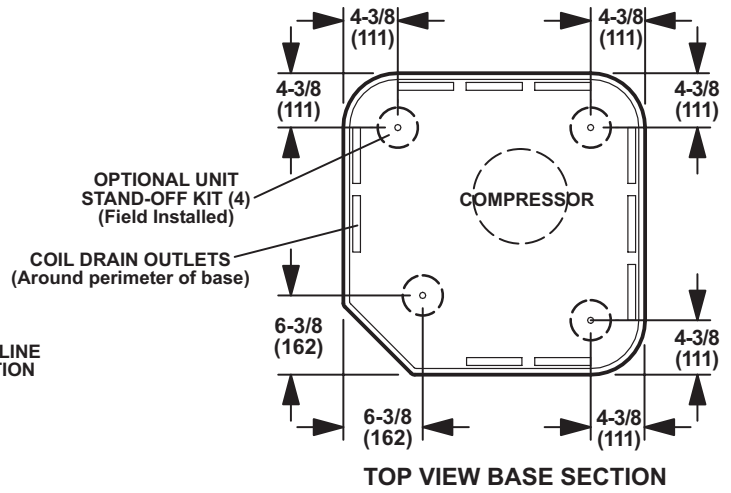
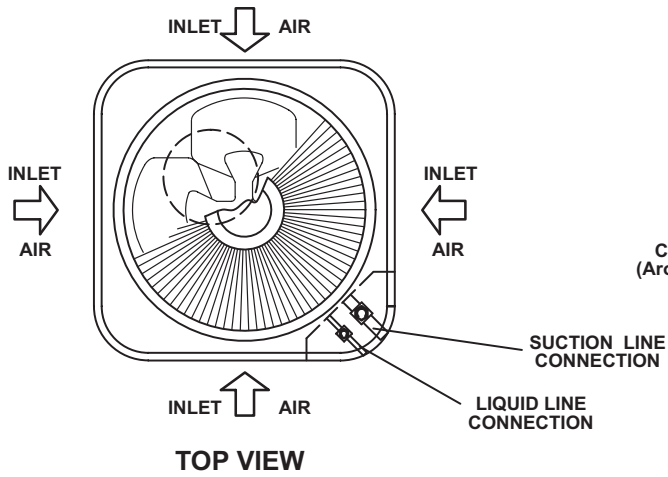
¹ Refrigerant charge sufficient for 15 ft. length of refrigerant lines.

² HACR type circuit breaker or fuse.

³ Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

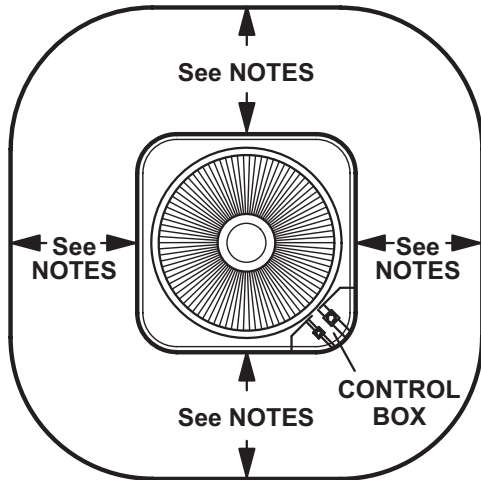
⁴ Freezestat is recommended with Low Ambient Control.

DIMENSIONS



| Model No. | A | | B | | C | |
|-----------|--------|-----|--------|-----|--------|-----|
| | inches | mm | inches | mm | inches | mm |
| TSA036S4 | 24-1/4 | 616 | 29-1/4 | 743 | 28-1/2 | 724 |
| TSA042S4 | 28-1/4 | 718 | 29-1/4 | 743 | 28-1/2 | 724 |
| TSA048S4 | 28-1/4 | 718 | 37-1/4 | 946 | 36-1/2 | 927 |
| TSA060S4 | 28-1/4 | 718 | 33-1/4 | 845 | 32-1/2 | 826 |

INSTALLATION CLEARANCES



NOTES:

Service clearance of 30 in. (762 mm) must be maintained on one of the sides adjacent to the control box.

Clearance to one of the other three sides must be 36 in. (914 mm)

Clearance to one of the remaining two sides may be 12 in. (305 mm) and the final side may be 6 in. (152 mm).

A clearance of 24 in. must be maintained between two units. 48 in. (1219 mm) clearance required on top of unit.

SOUND DATA

| ¹ Unit Model | Octave Band Sound Power Levels dBA, re 10 ⁻¹² Watts Center Frequency - HZ | | | | | | | ¹ Sound Rating Number (dBA) | ² Estimated Sound Pressure Level at Distance From Unit (dBA at distance in ft.) | | | | |
|-------------------------|---|------|------|------|------|------|------|--|--|----|----|----|----|
| | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | | 3 | 5 | 10 | 15 | 50 |
| TSA036S4 | 70.5 | 67.5 | 69.5 | 72.5 | 69.5 | 63 | 59 | 76 | 69 | 64 | 58 | 55 | 44 |
| TSA042S4 | 74 | 76.5 | 76.5 | 75.5 | 72 | 68 | 63.5 | 80 | 73 | 68 | 62 | 59 | 48 |
| TSA048S4 | 73.5 | 76 | 76 | 76.5 | 72.5 | 69.5 | 64.5 | 80 | 73 | 68 | 62 | 59 | 48 |
| TSA060S4 | 73.5 | 74.5 | 77 | 75 | 72 | 69 | 64.5 | 80 | 73 | 68 | 62 | 59 | 48 |

NOTE - the octave sound power data does not include tonal correction.

¹ Tested according to AHRI Standard 270-2008 test conditions.

² Estimated sound pressure level at distance based on AHRI Standard 275-2010 method for equipment located on the ground, roof, or on side of building wall with no adjacent reflective surface within 9.8 feet. Sound pressure levels will increase based on changes to assumptions. For other applications, refer to AHRI Standard 275.

TXV USAGE

Use this table for C35, CH23, CH35 and CR33 Field Installed TXV Match-Ups.

| Model No. | Thermal Expansion Valve (TXV) |
|-----------|-------------------------------|
| TSA036S4 | 12J19 |
| TSA042S4 | 12J20 |
| TSA048S4 | 12J20 |
| TSA060S4 | 12J20 |

CX35 and CHX35 coils and all Lennox air handlers are shipped with a factory installed TXV.

C35 and CH35 coils - Replace the factory installed RFC orifice with the expansion valve listed.

CR33 and CH23 coils - Use the expansion valve listed.

AHRI STANDARD 210/240

Cooling or heating capacities are net values, including the effects of blower motor heat, and do not include supplementary heat. Power input is the total power input to the compressor(s) and fan(s), plus any controls and other items required as part of the system for normal operation.

Units which do not have an indoor air-circulating blower furnished as part of the model, i.e., split system with indoor coil only, is established by subtracting from the total cooling capacity 1250 Btu/h per 1,000 cfm, and by adding the same amount to the heating capacity. Total power input for both heating and cooling is increased by 365 W per 1,000 cfm of indoor air circulated.

TXV SUBSTITUTION

A general guide for replacing the factory installed TXV if the indoor unit (coil/air handler) is larger or smaller than the outdoor unit.

| Outdoor Unit | | Indoor Unit | | TXV | TXV |
|--------------|------|-------------|-------|-----------|-------------|
| Size | Tons | Size | Tons | Furnished | Replacement |
| 036 | 3 | 24 | 2 | 12J18 | 12J19 |
| 036 | 3 | 30 | 2.5 | 12J18 | 12J19 |
| 042 | 3.5 | 24 | 2 | 12J18 | 12J20 |
| 042 | 3.5 | 30 | 2.5 | 12J18 | 12J20 |
| 042 | 3.5 | 30/36 | 3 | 12J19 | 12J20 |
| 042 | 3.5 | 36 | 3 | 12J19 | 12J20 |
| 048 | 4 | 30/36 | 2.5/3 | 12J19 | 12J20 |
| 048 | 4 | 36 | 3 | 12J19 | 12J20 |

TXV Ranges:

12J18 - 1.5 to 2.5 ton systems - Use on 2.5 ton (030) and lower systems.

12J19 - 3 ton systems - Use down to 2 ton (024) systems.

12J20 - 3.5 to 5 ton systems - Use down to 3 ton (036) systems.

REVISIONS

| Sections | Description of Change |
|------------------|-----------------------|
| TXV Substitution | Updated. |



Visit us at www.Lennox.com

For the latest technical information, www.LennoxCommercial.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.

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