



HEAT PUMPS

2SHP13

Dry Charge Split System - 60 HZ

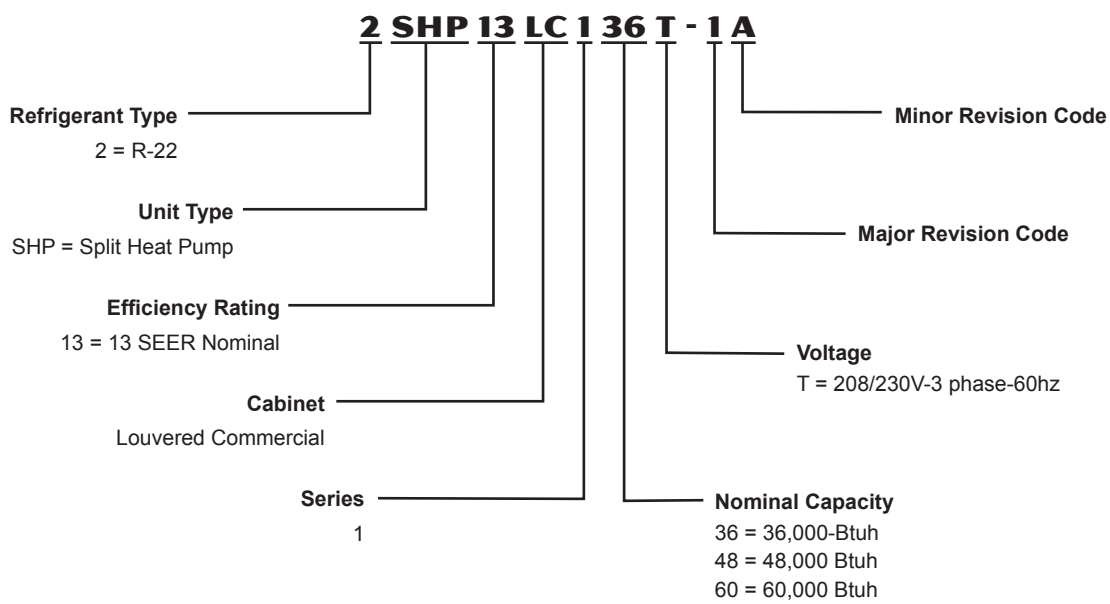
PRODUCT SPECIFICATIONS

Bulletin No. 210645
July 2013
Supersedes June 2012



3 to 5 Tons

MODEL NUMBER IDENTIFICATION



FEATURES

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EQUIPMENT WARRANTY

Compressor - limited warranty for **five years**. installations.

All other covered components - **one year**.

Refer to Lennox Equipment Limited Warranty certificate included with unit for specific details.

APPROVALS

Rated According to U.S. Department of Energy (DOE) test procedures.

Units and components within bonded for grounding to meet safety standards for servicing required by UL, NEC and CEC.

Units are UL listed

APPLICATIONS

3 through 5 tons.

Three phase power supply.

Nitrogen-charged for replacement of R-22 components only.

Designed for applications with remotely located indoor air handler units or matching indoor coils with gas furnaces (dual fuel applications).

Grommet-mounted compressor for quiet operation.

Discharge muffler for quiet operation.

Sound levels as low as 76 dB.

Internally manufactured to withstand high temperature conditions.

Designed for ambients up to 125°F.

Low pressure switch for loss of charge system protection.

Bi-directional filter drier for long-lasting durability.

REFRIGERATION SYSTEM

Copper Tube/Enhanced Fin Coil

Enhanced aluminum fins and copper tubing for high efficiency and capacity.

Raised coil prevents debris from collecting in bottom of coil and causing loss of airflow.

Entire coil is accessible for cleaning.

Coil is factory-tested under high pressure to ensure leakproof construction.

Outdoor Coil Fan

Direct drive fan moves large air volumes uniformly through entire condenser coil for high refrigerant cooling and heating capacity.

Vertical air discharge minimizes operating sounds and eliminates damage to lawn and shrubs.

Fan motor has sleeve bearings and is inherently protected.

Motor totally enclosed for maximum protection from weather, dust and corrosion.

Rain shield on motor provides additional protection from moisture.

Fan service access accomplished by removal of top panel.

High Capacity Liquid Line Drier

Factory installed in the liquid line, the drier traps moisture or dirt that could contaminate the refrigerant system.

100% molecular-sieve, bead type bi-flow drier.

Reversing Valve

4-way interchange reversing valve effects a rapid change in direction of refrigerant flow resulting in quick changeover from cooling to heating and vice versa.

Valve operates on pressure differential between outdoor unit and indoor unit of the system. Factory installed.

OPTIONS

Check/Expansion Valve Kit

Must be ordered separately and field installed on certain indoor units. See Specifications table.

Chatleff-style fittings.

Freezestat

Installs on or near the vapor 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 it's setpoint.

Opens at 29°F and closes at 58°F.

High Pressure Switch

Protects the system from high pressure conditions that can be a result of fan failure or a blocked/dirty coil.

Automatic reset.

Loss of Charge Kit

Helps protect the compressor from damage due low refrigerant charge conditions.

SPST, normally-closed switch, automatic reset switch mounted on suction line.

FEATURES

COMPRESSOR

Scroll Compressor

Compressor features high efficiency with uniform suction flow, constant discharge flow and high volumetric efficiency and quiet operation.

Compressor consists of two involute spiral scrolls matched together to 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 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.

Scroll 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.

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.



OPTIONS

Compressor Crankcase Heater

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

CONTROLS

Defrost Control

Time-initiated, temperature-terminated defrost system. Defrost control features built-in diagnostics for easier service.

Defrost control has short cycle protection to protect compressor.

Defrost control is Quiet Shift™ capable.

Defrost cycle is field selectable 30/60/90 minutes.

OPTIONS

Indoor Blower Off Delay Relay

Delays the indoor blower-off time during the cooling cycle.

Compressor Low Ambient Cut-Off

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

Low Ambient Kit

Heat pumps operate satisfactorily in the cooling mode down to 45°F outdoor air temperature without any additional controls.

Low Ambient Control Kit allows unit operation down to 30°F.

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

Mild Ambient Kit

Heat pump units operate satisfactorily in the heating mode at outdoor air temperatures up to 75°F.

Mild Weather Kit can be field installed, allowing heating operation above 75°F.

FEATURES

CABINET

Heavy gauge steel cabinet with five station metal wash process.

Louvered panels can be quickly removed by loosening two screws per panel.

Controls located in corner post for installation and service accessibility.

Baked polyester paint finish over galvanized steel for maximum durability.

Rounded corners for safety.

Raised base pan with ports allows water and debris drainage.

Refrigerant Line Connections, Electrical Inlets, Service Valves

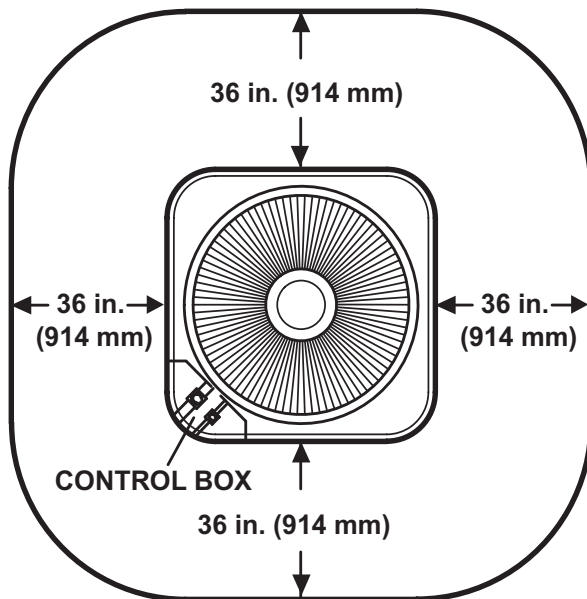
Sweat connection vapor and liquid lines are located on corner of unit cabinet.

Fully serviceable brass service valves prevent corrosion and provide access to refrigerant system. Vapor 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.

INSTALLATION CLEARANCES - INCHES (MM)



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.

OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS - FIELD INSTALLED

COMMERCIAL TOUCHSCREEN THERMOSTAT



Intuitive Touchscreen Interface - **Two Stage Heating / Two Stage Cooling Conventional or Heat Pump** - Seven Day Programmable - Four Time Periods/Day - Economizer Output - Title 24 Compliant - ENERGY STAR® Qualified - Backlit Display - Automatic Changeover

C0STAT02AE1L
(14W81)



Sensors For Touchscreen Thermostat

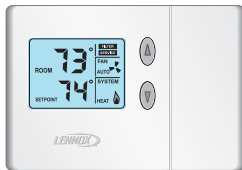
- ¹ Remote non-adjustable wall mount 20k temperature sensor C0SNZN01AE2-
(47W36)
- ¹ Remote non-adjustable wall mount 10k averaging temperature sensor C0SNZN73AE1-
(47W37)
- ¹ Remote non-adjustable duct mount temperature sensor C0SNDC00AE1-
(19L22)
- Outdoor temperature sensor C0SNSR03AE1-
(X4148)

Accessories For Touchscreen Thermostat

- Locking cover (clear) C0MISC15AE1-
(39P21)

¹ Remote sensors for C0STAT02AE1L can be applied in the following combinations: (1) C0SNZN01AE1-, (2) C0SNZN73AE1-, (2) C0SNZN01AE1- and (1) C0SNZN73AE1-, (4) C0SNZN01AE1-, (3) C0SNZN01AE1- and (2) C0SNZN73AE1.

DIGITAL NON-PROGRAMMABLE THERMOSTATS



Intuitive Interface - Automatic Changeover - Backlit Display - Simple Up and Down Temperature Control One-stage heating / cooling conventional systems C0STAT12AE1L
(51M32)

Sensor For Digital Non-Programmable Thermostats Above

- Outdoor temperature sensor C0SNSR04AE1-
(X2658)

Accessories For Digital Non-Programmable Thermostats Above

- Optional wall mounting plate C0MISC17AE1-
(X2659)

SPECIFICATIONS					
General Data		Model No.	2SHP13LC136T	2SHP13LC148T	2SHP13LC160T
Nominal Tonnage			3	4	5
Connections (sweat)		Liquid line o.d. - in.	3/8	3/8	3/8
		Vapor line o.d. - in.	7/8	7/8	7/8
¹ Refrigerant charge field supplied (R-22)			8 lbs. 10 oz.	11 lbs. 12 oz.	14 lbs. 0 oz.
Outdoor Coil		Tube diameter - in.	5/16	5/16	5/16
		Number of rows	2	2	2
		Fins per inch	22	22	22
Outdoor Fan		Diameter - in.	18	22	22
		Number of blades	4	4	4
		Motor hp	1/5	1/3	1/4
		Rpm	1075	1075	825
Shipping Data - lbs. 1 package			192	248	281
ELECTRICAL DATA					
Line voltage data - 60 hz - 3ph			208/230V	208/230V	208/230V
² Maximum overcurrent protection (amps)			25	35	35
³ Minimum circuit ampacity			14.5	20.9	21.0
Compressor		Rated load amps	10.8	15.4	15.4
		Locked rotor amps	73	114	114
Outdoor Fan Motor		Full load amps	1.1	1.7	1.8
SOUND DATA					
Sound Rating Number (dBa)			76	78	80
OPTIONAL ACCESSORIES - ORDER SEPARATELY					
Check/Expansion Valve Kit		56J20	•	•	•
Compressor Low Ambient Cut-Off		45F08	•	•	•
Compressor Time-Off Control		47J27	•	•	•
Compressor Crankcase Heater		93M05	•	•	•
Freezestat		3/8 in. tubing 93G35	•	•	•
		5/8 in. tubing 50A93	•	•	•
High Pressure Switch Kit		94J46	•	•	•
Indoor Blower Off Delay Relay		58M81	•	•	•
Loss of Charge Kit		84M23	•	•	•
⁴ Low Ambient Kit (30°F)		27J00	•	•	•
Mild Ambient Kit		33M07	•	•	•

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

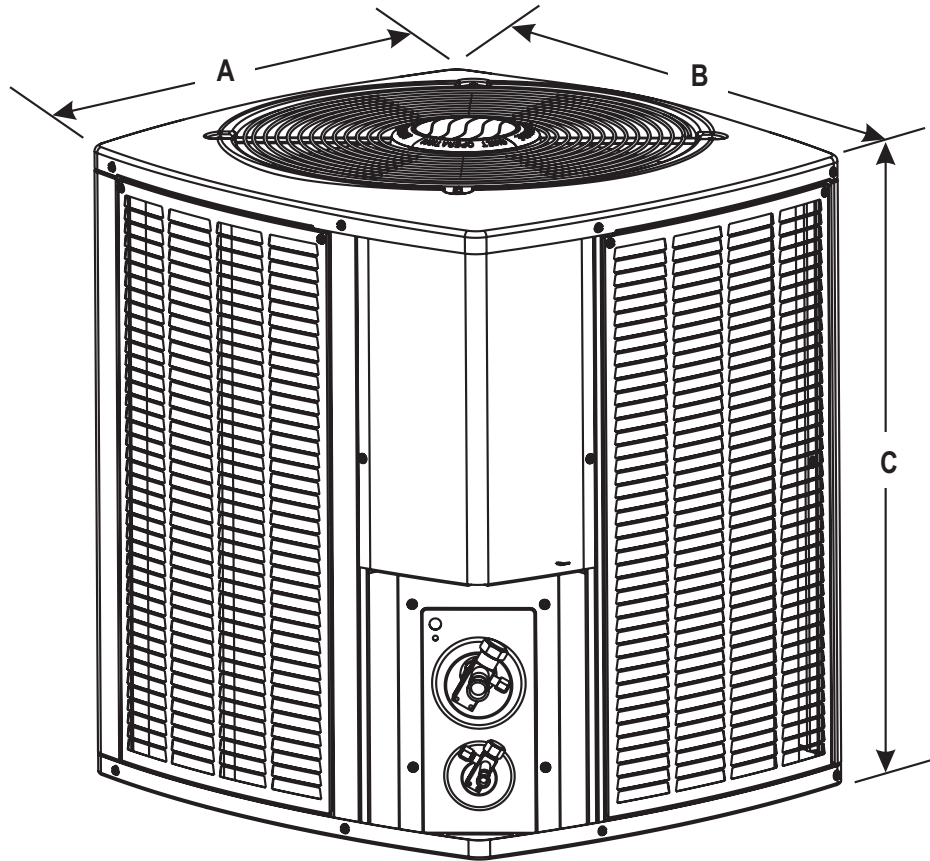
¹ Refrigerant charge sufficient for 15 ft. length of refrigerant lines.

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 - INCHES (MM)



Model No.	A		B		C	
	inches	mm	inches	mm	inches	mm
2SHP13LC136T	24-3/4	629	26-3/4	680	33-3/4	857
2SHP13LC148T	29-3/8	746	31-1/4	794	37-3/4	959
2SHP13LC160T	35-3/4	908	37-3/4	959	37-3/4	959

REVISIONS

Sections	Description of Change
Specifications	Updated for 2SHP13LC160T.
Dimensions	Updated for 2SHP13LC160T.



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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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