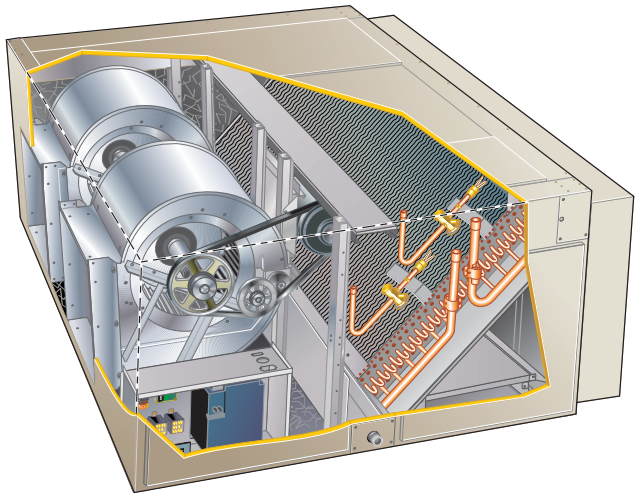
ELKA SERIES AIR HANDLER UNITS

ELKA series blower−coil units are designed for upflow or horizontal air and indoor applications only. ELKA blower units are available in six models; 072, 090, 120, 150, 180 and 240. The units match up with ELKC condensing units and ELKP heat pump units charged with R−454B refrigerant.

Information and specifications contained in this manual are subject to change. Procedures outlined in this manual are presented as a recommendation only and do not supersede or replace local or state codes.



⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a licensed professional HVAC installer or equivalent, service agency, or the gas supplier.

⚠ IMPORTANT

The Clean Air Act of 1990 bans the intentional venting of refrigerant (CFCs, HCFCs and HFCs) as of July 1, 1992. Approved methods of recovery, recycling or reclaiming must be followed. Fines and/or incarceration may be levied for noncompliance.

⚠ WARNING

Electric shock hazard! - Disconnect all power supplies before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

⚠ WARNING

To prevent serious injury or death:

1. Lock-out/tag-out before performing maintenance.
2. If system power is required (e.g., smoke detector maintenance), disable power to blower, remove fan belt where applicable, and ensure all controllers and thermostats are set to the “OFF” position before performing maintenance.
3. Always keep hands, hair, clothing, jewelry, tools, etc. away from moving parts.

NOTE *– The ELKA is a PARTIAL UNIT AIR HANDLER, complying with PARTIAL UNIT requirements in this standard, and must only be connected to other units that have been confirmed as complying to corresponding PARTIAL UNIT requirements of this Standard, UL 60335-2-40/CSA C22.2 No. 60335-2-40, or UL 1995/CSA C22.2 No 236.*

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⚠ CAUTION

As with any mechanical equipment, contact with sharp sheet metal edges can result in personal injury. Take care while handling this equipment and wear gloves and protective clothing.

⚠ IMPORTANT

This unit must be matched with an indoor coil as specified with AHRI. For AHRI Certified system matchups and expanded ratings, visit www.LennoxPros.com.

NOTE *– Appliance intended only for indoor use (excluding laundry rooms).*

NOTE *– For installation only in locations NOT accessible to the general public, such as under a drop ceiling or within a mechanical closet.*

⚠ WARNING

- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance, or an operating electric heater).
- Do not pierce or burn.
- Be aware that refrigerants may not contain an odor.

⚠ CAUTION

Servicing shall be performed only as recommended by the manufacturer.

⚠ WARNING

Ducts connected to an appliance shall not contain a potential ignition source

⚠ WARNING

Every working procedure that affects safety means shall only be carried out by competent persons. This appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure they do not play with the appliance.

⚠ IMPORTANT

Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out.

⚠ IMPORTANT

Verify cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects.

⚠ IMPORTANT

Pipe work, including piping material, pipe routing, and installation shall include protection from physical damage in operation and service, and be in compliance with national and local codes and standards, such as ASHRAE 15, ASHRAE 15.2, IAPMO Uniform Mechanical Code, ICC International Mechanical Code, or CSA B52. All field joints shall be accessible for inspection prior to being covered or enclosed.

⚠ CAUTION

Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.

The following leak detection methods are deemed acceptable for all refrigerant systems.

Electronic leak detectors may be used to detect refrigerant leaks but, in the case of flammable refrigerants, the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25 % maximum) is confirmed. Leak detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work. If a leak is suspected, all naked flames shall be removed/extinguished. If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak.

⚠ CAUTION

Some soaps used for leak detection are corrosive to certain metals. Carefully rinse piping thoroughly after leak test has been completed. Do not use matches, candles, flame or other sources of ignition to check for gas leaks.

⚠ WARNING

PARTIAL UNITS shall only be connected to an appliance suitable for the same refrigerant.

⚠ IMPORTANT

When breaking into the refrigerant circuit to make repairs – or for any other purpose – conventional procedures shall be used. However, for flammable refrigerants it is important that best practice be followed and, since flammability is a consideration, procedures such as safely remove refrigerant following local and national regulations, purging the circuit with inert gas, evacuating (optional for A2L), purging with inert gas (optional for A2L), or opening the circuit by cutting or brazing be adhered to. The refrigerant charge shall be recovered into the correct recovery cylinders if venting is not allowed by local and national codes. For appliances containing flammable refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants.

This process might need to be repeated several times. Compressed air or oxygen shall not be used for purging refrigerant systems. For appliances containing flammable refrigerants, refrigerants purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum (optional for A2L). This process shall be repeated until no refrigerant is within the system (optional for A2L). When the final oxygen-free nitrogen charge is used, the system shall be vented down to atmospheric pressure to enable work to take place. Ensure that the outlet for the vacuum pump is not close to any potential ignition sources and that ventilation is available.

⚠ IMPORTANT

In addition to conventional charging procedures, the following requirements shall be followed.

- Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them.
- Cylinders shall be kept in an appropriate position according to the instructions.
- Ensure that the REFRIGERATING SYSTEM is earthed prior to charging the system with refrigerant.
- Label the system when charging is complete (if not already).
- Extreme care shall be taken not to overfill the REFRIGERATING SYSTEM.

Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak tested on completion of charging, but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

⚠ IMPORTANT

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.

When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i. e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of all appropriate refrigerants including, when applicable, flammable refrigerants. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.

The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.

If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safely.

⚠ IMPORTANT

After completion of field piping for split systems, the field pipework shall be pressure tested with an inert gas and then vacuum tested prior to refrigerant charging, according to the following requirements;

– Field-made refrigerant joints indoors shall be tightness tested. The test method shall have a sensitivity of .2 oz. per year of refrigerant or better, under pressure.

No leak shall be detected.

⚠ IMPORTANT

Prior to beginning work on systems containing FLAMMABLE REFRIGERANTS, safety checks are necessary to ensure that the risk of ignition is minimized.

⚠ IMPORTANT

Work shall be undertaken under a controlled procedure so as to minimize the risk of a flammable gas or vapor being present while the work is being performed.

⚠ IMPORTANT

All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided.

⚠ IMPORTANT

The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.

⚠ IMPORTANT

If any hot work is to be conducted on the refrigerating equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO^2 fire extinguisher adjacent to the charging area.

⚠ IMPORTANT

No person carrying out work in relation to a REFRIGERATING SYSTEM which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. “No Smoking” signs shall be displayed.

⚠ IMPORTANT

Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer’s maintenance and service guidelines shall be followed. If in doubt, consult the manufacturer’s technical department for assistance.

The following checks shall be applied to installations using FLAMMABLE REFRIGERANTS:

– the actual REFRIGERANT CHARGE is in accordance with the room size within which the refrigerant containing parts are installed;

– the ventilation machinery and outlets are operating adequately and are not obstructed;

– if an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant;

– marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected;

– refrigerating pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

⚠ IMPORTANT

Sealed electrical components shall be replaced.

⚠ IMPORTANT

Intrinsically safe components must be replaced.

NOTE *– R-454B is an A2L refrigerant. The system installation must meet the following parameters based upon total refrigerant charge (line set included). TAmin (Total minimum conditioned area) is the minimum allowable conditioned area based upon the total system charge at sea level. Values must be multiplied by altitude adjustment factor at installed altitude.*

Qmin table refers to minimum airflow requirements during refrigerant leak mitigation by the refrigerant detection system, based upon total system charge.

See tables below.

TAmin Table

Charge (lb)	10.0	15.0	20.0	25.0	30.0
Charge (kg)	4.5	6.8	9.1	11.3	13.6
Minimum Conditioned Area (ft2)	149.9	224.9	299.9	374.8	449.8
Minimum Conditioned Area (m2)	13.9	20.9	27.9	34.8	41.8

NOTE *– Multiply values in TAmin table by the Altitude Adjustment Factors to correct TAmin based on installed altitude.*

Altitude Adjustment Factor

Altitude (m)	0	200	400	600	800	1000	1200	1400	1600
Altitude (ft)	0	660	1310	1970	2620	3280	3940	4590	5250
Adj. Factor	1	1	1	1	1.02	1.05	1.04	1.1	1.12
Altitude (m)	1600	1800	2000	2200	2400	2600	2800	3000	3200
Altitude (ft)	5250	5910	6560	7220	7870	8530	9190	9840	10500
Adj. Factor	1.12	1.15	1.18	1.21	1.25	1.28	1.32	1.36	1.4

Qmin Table

Refrigerant Charge lb (kg)	CFM Required	Refrigerant Charge lb (kg)	CFM Required
5 (2.3)	135	18 (8.1)	487
6 (2.7)	162	19 (8.6)	514
7 (3.2)	189	20 (9.1)	541
8 (3.6)	216	21 (9.5)	568
9 (4.1)	244	22 (10)	595
10 (4.5)	271	23 (10.4)	622
11 (5)	298	24 (10.9)	649
12 (5.4)	325	25 (11.3)	676
13 (5.9)	352	26 (11.7)	704
14 (6.4)	379	27 (12.2)	731
15 (6.8)	406	28 (12.7)	758
16 (7.3)	433	29 (13.2)	785
17 (7.7)	460	30 (13.6)	812

SPECIFICATIONS

Model No.		EL072KASS	EL090KASD
Nominal Tonnage		6	7.5
Blower Type		MSAV® Multi-Stage Air Volume	MSAV® Multi-Stage Air Volume
Connections	Circuits	1	2
	Liquid line (OD) - in. (sweat)	(1) 5/8	(2) 5/8
	Suction/Vapor line (OD) - in. (sweat)	(1) 7/8	(2) 7/8
	Condensate drain size (NPT) - in.	1	1
Refrigerant	Not Furnished	R-454B	R-454B
Evaporator Coil	Net face area - sq. ft.	9.2	9.2
	Coil (Face) Split - 1st stage / 2nd stage (%)	- - -	50/50
	Tube diameter - in.	3/8	3/8
	Rows	3	4
	Fins - in.	17	17
Blower and Drive		See Blower Drive Specifications Table on page 14.	
	Wheel (Number) diameter x width - in.	(1) 15 x 15	(1) 15 x 15
[1] **Filter**	Number and size - in.	(3) 16 x 25 x 2	(3) 16 x 25 x 2

[1] External Filter Rack is shipped with unit for field assembly and installation.

SPECIFICATIONS

Model No.		EL120KASD	EL150KASD	EL180KASD	EL240KASD
Nominal Tonnage		10	12.5	15	20
Blower Type		MSAV® Multi-Stage Air Volume	MSAV® Multi-Stage Air Volume	MSAV® Multi-Stage Air Volume	MSAV® Multi-Stage Air Volume
Connections	Circuits	2	2	2	2
	Liquid line (OD) - in. (sweat)	(2) 5/8	(2) 5/8	(2) 5/8	(2) 5/8
	Suction/Vapor line (OD) - in. (sweat)	(2) 7/8	(2) 7/8	(2) 1-1/8	(2) 1-1/8
	Condensate drain size (NPT) - in.	1	1	1	1
Refrigerant	Not Furnished	R-454B	R-454B	R-454B	R-454B
Evaporator Coil	Net face area - sq. ft.	12.5	12.5	18.5	18.5
	Coil (Face) Split - 1st stage / 2nd stage (%)	50/50	50/50	50/50	50/50
	Tube diameter - in.	3/8	3/8	3/8	3/8
	Rows	4	4	3	4
	Fins - in.	17	17	17	17
Blower and Drive		See Blower Drive Specifications Table on page 14.			
	Wheel (Number) diameter x width - in.	(1) 15 x 15	(1) 15 x 15	(2) 15 x 15	(2) 15 x 15
[1] **Filter**	Number and size - in.	(4) 16 x 25 x 2	(4) 16 x 25 x 2	(6) 16 x 25 x 2	(6) 16 x 25 x 2

[1] External Filter Rack is shipped with unit for field assembly and installation.

OPTIONS / ACCESSORIES

Item	Order Number	072	090	120	150	180	240
BLOWER							
Blower Motor and Drive Kits	**Factory**	See page 14					
CABINET							
Float Switch	**38B36**	X	X	X	X	X	X
CONTROL SYSTEMS							
BACnet® Module and Enclosure Kit	**38V32**	X	X	[1] X			
BACnet® Sensor with Display	**97W23**	X	X	X			
BACnet® Sensor without Display	**97W24**	X	X	X			

[1] Only for use with a single compressor outdoor unit.

O - Factory Installed with extended lead time.

X - Field Installed.

OPTIONS / ACCESSORIES

Item		Order Number	072	090	120	150	180	240
ELECTRIC HEAT								
10 kW	208/240V-3ph	**38C11**	X	X	X	X		
	460V-3ph	**38C15**	X	X	X	X		
	575V-3ph	**38C19**	X	X	X	X		
15 kW	208/240V-3ph	**38C12**	X	x	X	X		
	460V-3ph	**38C16**	X	X	X	X		
	575V-3ph	**38C21**	X	X	X	X		
25 kW	208/240V-3ph	**38C13**	X	X	X	X		
	460V-3ph	**38C17**	X	X	X	X		
	575V-3ph	**38C22**	X	X	X	X		
35 kW	208/240V-3ph	**38C14**		X	X	X		
	460V-3ph	**38C18**		X	X	X		
	575V-3ph	**38C23**		X	X	X		
20 kW	208/240V-3ph	**38C24**					X	X
	460V-3ph	**38C28**					X	X
	575V-3ph	**38C32**					X	X
30 kW	208/240V-3ph	**38C25**					X	X
	460V-3ph	**38C29**					X	X
	575V-3ph	**38C33**					X	X
40 kW	208/240V-3ph	**38C26**					X	X
	460V-3ph	**38C30**					X	X
	575V-3ph	**38C34**					X	X
50 kW	208/240V-3ph	**38C27**					X	X
	460V-3ph	**38C31**					X	X
	575V-3ph	**38C35**					X	X
ECONOMIZER								
High Performance Economizers								
		20V20	X	X				
		20V21			X	X		
		20V22					X	X
Economizer Controls (Not for Title 24)								
Single Enthalpy Control (High Performance Economizer)		**11G21**	X	X	X	X	X	X
NOTE - For Differential Enthalpy Control Order Two Of The Same Control Above.								
HOT WATER COIL								
		44W20	X	X	X	X		
		44W21					X	X
INDOOR AIR QUALITY								
Air Filters								
[1] Healthy Climate® Air Filters (16 x 25 x 4)	MERV 8	**16C78**	X	X	X	X	X	X
	MERV 13	**16C79**	X	X	X	X	X	X
4-Inch Filter Mounting Kits		**17A05**	X	X				
		17A06			X	X		
		17A07					X	X
Indoor Air Quality (CO_2) Sensors								
Sensor - Wall-mount, off-white plastic cover with LCD display		**77N39**	X	X	X	X	X	X
Sensor - Wall-mount, off-white plastic cover, no display		**23V86**	X	X	X	X	X	X
Sensor - Black plastic case with LCD display, rated for plenum mounting		**87N52**	X	X	X	X	X	X
Sensor - Wall-mount, black plastic case, no display, rated for plenum mounting		**23V87**	X	X	X	X	X	X
CO_2 Sensor Duct Mounting Kit		**23Y47**	X	X	X	X	X	X
Aspiration Box - for duct mounting non-plenum rated CO_2 sensor (**77N39**)		**90N43**	X	X	X	X	X	X

X - Field Installed.

[1] Order 4 in. Filter Mounting Kit and required number of MERV 8 or MERV 13 filters: - (3) 072-090, (4) 120-150, (6) 180-240.

BLOWER DATA EL072KA

All data is measured external to the unit with dry coil and standard 2 in. air filters in place.
FOR ALL UNITS ADD:
1 - Wet indoor coil air resistance of selected unit.
2 - Any field installed accessories air resistance (electric heat, economizer, etc.) See page 15.
Then determine from table the blower motor hp and drive rpm required. See page 14 for blower drive specifications.

Air Volume cfm	STATIC PRESSURE EXTERNAL TO UNIT - Inches Water Gauge																	
	0.2		0.3		0.4		0.5		0.6		0.7		0.8		0.9		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	411	0.11	453	0.20	494	0.26	535	0.31	584	0.32	638	0.31	688	0.32	729	0.37	762	0.46
1300	416	0.14	458	0.23	499	0.29	541	0.34	589	0.36	642	0.35	692	0.36	733	0.41	765	0.50
1400	421	0.16	463	0.25	505	0.32	546	0.37	594	0.39	647	0.38	696	0.40	736	0.45	768	0.54
1500	427	0.19	468	0.28	510	0.35	551	0.40	599	0.42	651	0.42	699	0.44	739	0.49	771	0.58
1600	432	0.22	473	0.30	515	0.38	556	0.44	604	0.46	656	0.46	703	0.48	742	0.53	774	0.62
1700	438	0.24	479	0.33	520	0.41	561	0.47	609	0.49	660	0.50	707	0.52	745	0.58	777	0.67
1800	444	0.27	485	0.36	526	0.44	567	0.50	614	0.53	665	0.54	711	0.56	749	0.62	780	0.71
1900	450	0.30	491	0.39	532	0.47	573	0.53	619	0.57	670	0.58	715	0.60	752	0.67	783	0.76
2000	457	0.33	497	0.42	538	0.50	579	0.57	625	0.60	674	0.62	719	0.65	756	0.71	786	0.80
2100	464	0.36	504	0.45	544	0.53	585	0.60	631	0.64	679	0.66	723	0.69	759	0.76	790	0.85
2200	471	0.40	511	0.49	551	0.57	591	0.64	636	0.68	684	0.70	728	0.74	763	0.81	794	0.90
2300	478	0.43	518	0.52	558	0.61	598	0.68	643	0.72	690	0.75	732	0.79	767	0.86	797	0.95
2400	485	0.47	525	0.56	565	0.65	605	0.72	649	0.77	695	0.79	737	0.83	771	0.91	802	1.01
2500	493	0.51	533	0.60	572	0.69	612	0.76	655	0.81	701	0.84	742	0.88	776	0.96	806	1.06
2600	500	0.55	540	0.64	580	0.73	619	0.80	662	0.85	707	0.89	747	0.93	780	1.01	810	1.12
2700	508	0.59	548	0.68	588	0.77	627	0.84	670	0.90	713	0.93	752	0.99	785	1.07	815	1.18
2800	516	0.63	556	0.72	596	0.81	635	0.88	678	0.94	720	0.98	758	1.04	790	1.13	820	1.25
2900	523	0.67	564	0.76	604	0.85	644	0.92	686	0.98	727	1.03	763	1.10	795	1.19	826	1.31
3000	531	0.71	573	0.80	613	0.89	653	0.96	694	1.03	734	1.08	769	1.15	801	1.26	831	1.38

Air Volume cfm	STATIC PRESSURE EXTERNAL TO UNIT - Inches Water Gauge																	
	1.1		1.2		1.3		1.4		1.5		1.6		1.7		1.8		1.9		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	790	0.55	817	0.64	844	0.70	871	0.75	897	0.80	924	0.85	951	0.90	979	0.96	1008	1.01	1036	1.07
1300	793	0.59	820	0.68	847	0.74	874	0.79	900	0.85	927	0.90	954	0.95	982	1.01	1011	1.06	1039	1.12
1400	796	0.63	823	0.72	850	0.78	877	0.84	903	0.89	930	0.95	958	1.00	986	1.06	1014	1.11	1043	1.18
1500	799	0.68	827	0.76	853	0.82	880	0.88	906	0.94	933	0.99	961	1.05	989	1.11	1018	1.17	1046	1.23
1600	802	0.72	830	0.80	857	0.87	883	0.93	909	0.99	936	1.04	964	1.10	992	1.16	1021	1.23	1050	1.29
1700	805	0.76	833	0.84	860	0.91	886	0.97	913	1.03	940	1.10	967	1.16	996	1.22	1025	1.28	1054	1.35
1800	808	0.81	837	0.89	864	0.96	890	1.02	916	1.08	943	1.15	971	1.21	999	1.28	1029	1.35	1058	1.42
1900	812	0.85	840	0.94	867	1.01	894	1.07	920	1.14	946	1.20	974	1.27	1003	1.34	1032	1.41	1062	1.48
2000	815	0.90	844	0.98	871	1.06	898	1.12	924	1.19	950	1.26	978	1.33	1007	1.40	1036	1.47	1066	1.55
2100	819	0.95	848	1.04	876	1.11	902	1.18	928	1.25	954	1.32	982	1.39	1011	1.47	1040	1.54	1070	1.62
2200	823	1.00	852	1.09	880	1.16	907	1.24	932	1.31	958	1.38	986	1.46	1015	1.54	1045	1.61	1074	1.69
2300	827	1.06	857	1.14	885	1.22	912	1.30	937	1.37	962	1.45	990	1.53	1020	1.61	1049	1.69	1078	1.77
2400	832	1.11	862	1.20	890	1.28	917	1.36	942	1.44	967	1.52	995	1.60	1024	1.68	1053	1.76	1083	1.85
2500	836	1.17	867	1.26	896	1.34	923	1.43	949	1.51	973	1.59	1000	1.67	1029	1.76	1058	1.84	1087	1.92
2600	841	1.23	872	1.32	901	1.41	929	1.49	955	1.58	979	1.66	1006	1.75	1034	1.83	1063	1.92	1091	2.01
2700	846	1.29	877	1.39	907	1.48	935	1.57	962	1.66	986	1.74	1012	1.83	1039	1.91	1067	2.00	1096	2.09
2800	852	1.36	883	1.46	913	1.55	941	1.64	968	1.73	992	1.82	1017	1.91	1044	2.00	1072	2.08	1100	2.17
2900	857	1.43	889	1.52	919	1.62	947	1.71	974	1.81	998	1.90	1023	1.99	1049	2.08	1077	2.17	1105	2.26
3000	863	1.49	894	1.60	925	1.69	953	1.79	979	1.89	1004	1.99	1028	2.08	1054	2.17	1081	2.26	1109	2.35

BLOWER DATA EL090KA

All data is measured external to the unit with dry coil and standard 2 in. air filters in place.
FOR ALL UNITS ADD:
1 - Wet indoor coil air resistance of selected unit.
2 - Any field installed accessories air resistance (electric heat, economizer, etc.) See page 15.
Then determine from table the blower motor hp and drive rpm required. See page 14 for blower drive specifications.

Air Volume cfm	STATIC PRESSURE EXTERNAL TO UNIT - Inches Water Gauge																	
	0.2		0.3		0.4		0.5		0.6		0.7		0.8		0.9		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1600	444	0.24	485	0.33	527	0.40	568	0.45	617	0.47	669	0.46	715	0.49	752	0.55	782	0.65
1700	451	0.27	492	0.36	534	0.43	575	0.49	623	0.51	674	0.50	719	0.53	756	0.60	786	0.70
1800	458	0.30	499	0.39	541	0.46	582	0.52	630	0.54	680	0.55	724	0.58	760	0.65	790	0.75
1900	466	0.33	507	0.42	548	0.50	589	0.56	636	0.58	686	0.59	729	0.62	764	0.70	794	0.80
2000	474	0.37	514	0.46	555	0.53	596	0.60	643	0.62	691	0.63	734	0.67	769	0.75	799	0.85
2100	482	0.40	522	0.49	563	0.57	603	0.64	650	0.67	697	0.68	739	0.72	773	0.80	803	0.90
2200	490	0.44	531	0.53	571	0.61	611	0.68	657	0.71	704	0.73	745	0.77	778	0.85	808	0.95
2300	499	0.48	539	0.57	579	0.65	619	0.72	664	0.75	710	0.77	750	0.82	783	0.90	814	1.01
2400	508	0.52	548	0.61	588	0.69	627	0.76	672	0.80	717	0.82	756	0.87	788	0.96	819	1.07
2500	517	0.56	557	0.65	597	0.73	636	0.80	680	0.84	724	0.87	762	0.93	794	1.02	825	1.13
2600	526	0.61	566	0.69	606	0.77	645	0.84	688	0.88	731	0.92	768	0.98	800	1.08	831	1.20
2700	535	0.65	576	0.74	615	0.81	655	0.88	697	0.93	738	0.97	774	1.04	806	1.15	837	1.26
2800	545	0.69	586	0.78	625	0.85	665	0.92	706	0.97	746	1.02	781	1.10	812	1.21	844	1.33
2900	555	0.73	596	0.82	636	0.90	675	0.97	715	1.02	754	1.08	788	1.17	819	1.28	850	1.40
3000	566	0.78	606	0.86	646	0.94	685	1.01	725	1.07	762	1.14	795	1.24	826	1.35	857	1.47
3100	577	0.82	618	0.91	657	0.98	696	1.06	734	1.13	770	1.20	802	1.31	833	1.43	864	1.55
3200	589	0.87	629	0.95	668	1.03	706	1.11	744	1.19	778	1.27	810	1.38	840	1.50	872	1.62
3300	601	0.93	641	1.00	679	1.08	717	1.17	753	1.25	787	1.35	817	1.46	848	1.58	879	1.70
[1] 3400	614	0.98	653	1.06	691	1.14	727	1.23	763	1.32	795	1.42	825	1.54	855	1.66	886	1.78
[1] 3500	627	1.05	665	1.13	702	1.21	738	1.30	772	1.40	803	1.51	833	1.63	863	1.75	894	1.86
[1] 3600	641	1.11	678	1.19	714	1.28	749	1.37	782	1.48	812	1.59	841	1.71	871	1.83	901	1.95

[1] Airflow exceeding 450 cfm per ton is not recommended in high humidity applications.

Air Volume cfm	STATIC PRESSURE EXTERNAL TO UNIT - Inches Water Gauge																	
	1.1		1.2		1.3		1.4		1.5		1.6		1.7		1.8		1.9		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1600	811	0.75	838	0.82	865	0.88	891	0.94	918	1.00	945	1.06	973	1.12	1001	1.18	1030	1.25	1059	1.31
1700	815	0.79	842	0.87	869	0.93	895	0.99	922	1.06	949	1.12	977	1.18	1006	1.24	1035	1.31	1063	1.38
1800	819	0.84	847	0.92	873	0.98	899	1.04	926	1.11	953	1.17	981	1.24	1010	1.31	1039	1.37	1068	1.44
1900	823	0.89	851	0.97	878	1.03	904	1.10	930	1.16	958	1.23	986	1.30	1015	1.37	1044	1.44	1073	1.51
2000	828	0.94	856	1.02	883	1.08	909	1.15	935	1.22	962	1.29	991	1.36	1020	1.44	1049	1.51	1078	1.58
2100	833	0.99	861	1.07	888	1.14	914	1.21	939	1.28	967	1.36	995	1.43	1025	1.50	1054	1.58	1083	1.66
2200	838	1.05	867	1.13	893	1.20	919	1.27	945	1.35	972	1.42	1000	1.50	1030	1.58	1059	1.65	1088	1.73
2300	844	1.11	872	1.19	899	1.26	925	1.34	950	1.41	977	1.49	1006	1.57	1035	1.65	1064	1.73	1093	1.81
2400	849	1.17	878	1.25	906	1.32	931	1.40	956	1.48	983	1.56	1012	1.65	1041	1.73	1070	1.81	1099	1.89
2500	855	1.23	885	1.32	912	1.39	939	1.47	963	1.56	989	1.64	1018	1.72	1046	1.81	1075	1.89	1104	1.97
2600	862	1.30	891	1.38	919	1.46	946	1.55	971	1.63	996	1.72	1024	1.80	1052	1.89	1081	1.97	1110	2.06
2700	868	1.37	898	1.45	927	1.54	953	1.63	978	1.71	1003	1.80	1030	1.89	1058	1.97	1087	2.06	1115	2.15
2800	875	1.44	905	1.53	934	1.61	961	1.71	985	1.80	1010	1.88	1037	1.97	1064	2.06	1092	2.15	1121	2.24
2900	882	1.51	912	1.60	941	1.69	968	1.79	992	1.88	1017	1.97	1043	2.06	1070	2.15	1098	2.24	1126	2.33
3000	889	1.58	919	1.68	948	1.77	974	1.87	999	1.97	1024	2.06	1049	2.15	1076	2.24	1104	2.33	1132	2.43
3100	896	1.65	926	1.75	955	1.86	981	1.96	1006	2.05	1030	2.15	1055	2.24	1082	2.33	1110	2.43	1138	2.53
3200	903	1.73	933	1.84	962	1.94	988	2.04	1012	2.14	1036	2.24	1061	2.33	1088	2.43	1116	2.53	1144	2.63
3300	910	1.81	940	1.92	968	2.03	994	2.13	1018	2.23	1042	2.33	1067	2.43	1094	2.53	1122	2.63	1150	2.74
[1] 3400	917	1.89	947	2.01	975	2.12	1000	2.23	1024	2.33	1048	2.43	1074	2.53	1100	2.63	1128	2.74	1156	2.84
[1] 3500	924	1.98	954	2.09	981	2.21	1006	2.32	1030	2.43	1055	2.53	1080	2.63	1106	2.74	1134	2.84	1162	2.95
[1] 3600	932	2.07	960	2.19	987	2.30	1012	2.42	1036	2.53	1061	2.63	1086	2.74	1113	2.84	1140	2.95	1169	3.05

[1] Airflow exceeding 450 cfm per ton is not recommended in high humidity applications.

BLOWER DATA EL120KA

All data is measured external to the unit with dry coil and standard 2 in. air filters in place.
FOR ALL UNITS ADD:
1 - Wet indoor coil air resistance of selected unit.
2 - Any field installed accessories air resistance (electric heat, economizer, etc.) See page 15.
Then determine from table the blower motor hp and drive rpm required. See page 14 for blower drive specifications.

Air Volume cfm	STATIC PRESSURE EXTERNAL TO UNIT - Inches Water Gauge																	
	0.2		0.3		0.4		0.5		0.6		0.7		0.8		0.9		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2000	484	0.31	515	0.39	547	0.47	582	0.55	618	0.63	657	0.71	695	0.80	732	0.87	766	0.94
2200	492	0.38	523	0.46	555	0.54	589	0.62	626	0.70	665	0.78	703	0.87	738	0.95	772	1.02
2400	501	0.46	531	0.54	563	0.61	598	0.69	635	0.77	673	0.86	710	0.94	745	1.02	778	1.10
2600	511	0.54	541	0.62	573	0.69	607	0.77	644	0.85	681	0.94	718	1.03	752	1.11	785	1.19
2800	521	0.63	551	0.70	583	0.78	617	0.85	653	0.94	690	1.02	726	1.11	760	1.20	792	1.28
3000	532	0.72	562	0.79	594	0.87	628	0.94	664	1.03	700	1.12	735	1.21	768	1.30	800	1.38
3200	544	0.81	574	0.88	606	0.96	640	1.04	675	1.12	710	1.22	744	1.31	777	1.41	808	1.49
3400	556	0.90	586	0.98	618	1.06	652	1.14	687	1.23	721	1.33	754	1.43	786	1.52	816	1.61
3600	570	1.01	600	1.09	632	1.17	665	1.26	699	1.35	732	1.44	764	1.54	795	1.64	825	1.73
3800	585	1.12	615	1.21	647	1.29	679	1.38	712	1.47	744	1.56	775	1.66	806	1.76	835	1.86
4000	600	1.25	631	1.34	662	1.42	694	1.51	725	1.59	757	1.69	787	1.79	817	1.90	845	2.00
4200	617	1.38	647	1.47	678	1.55	709	1.64	739	1.73	769	1.82	799	1.93	828	2.04	856	2.15
4400	635	1.53	664	1.61	694	1.69	724	1.78	754	1.87	783	1.96	812	2.07	840	2.19	867	2.32
4600	653	1.68	682	1.76	711	1.84	740	1.92	768	2.01	797	2.11	825	2.23	852	2.36	879	2.51
4800	672	1.83	700	1.91	728	1.99	756	2.08	783	2.17	811	2.28	838	2.41	865	2.56	891	2.71

Air Volume cfm	STATIC PRESSURE EXTERNAL TO UNIT - Inches Water Gauge																	
	1.1		1.2		1.3		1.4		1.5		1.6		1.7		1.8		1.9		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2000	798	1.01	828	1.07	857	1.13	885	1.19	912	1.26	938	1.33	963	1.40	987	1.47	1012	1.54	1035	1.62
2200	804	1.09	834	1.15	863	1.22	890	1.29	917	1.36	943	1.43	968	1.50	992	1.58	1017	1.66	1040	1.74
2400	810	1.17	840	1.24	869	1.31	896	1.38	922	1.46	948	1.54	973	1.62	998	1.70	1022	1.78	1045	1.87
2600	816	1.26	846	1.33	875	1.41	902	1.49	928	1.57	954	1.66	978	1.75	1003	1.83	1027	1.92	1051	2.01
2800	823	1.36	853	1.43	881	1.52	908	1.60	934	1.69	959	1.79	984	1.88	1008	1.97	1032	2.07	1056	2.16
3000	830	1.46	859	1.54	887	1.63	914	1.73	940	1.83	965	1.93	990	2.03	1014	2.13	1038	2.22	1062	2.32
3200	838	1.57	867	1.66	894	1.76	920	1.86	946	1.97	971	2.08	996	2.18	1020	2.29	1044	2.39	1068	2.49
3400	846	1.69	874	1.79	901	1.89	927	2.00	953	2.12	978	2.24	1002	2.35	1026	2.46	1050	2.57	1074	2.68
3600	854	1.82	882	1.92	909	2.04	935	2.16	960	2.29	984	2.41	1008	2.53	1032	2.65	1056	2.76	1080	2.87
3800	864	1.96	891	2.07	917	2.20	942	2.33	967	2.46	991	2.59	1015	2.72	1039	2.84	1062	2.96	1086	3.07
4000	873	2.11	900	2.24	925	2.37	950	2.51	975	2.65	998	2.79	1022	2.92	1045	3.04	1069	3.16	1092	3.28
4200	883	2.28	909	2.41	934	2.56	959	2.70	982	2.85	1006	2.99	1029	3.13	1052	3.25	1075	3.38	1099	3.50
4400	894	2.46	919	2.61	944	2.76	967	2.91	991	3.06	1014	3.21	1037	3.35	1059	3.48	1083	3.60	1106	3.73
4600	905	2.66	930	2.82	953	2.98	977	3.14	1000	3.29	1022	3.44	1045	3.58	1067	3.71	1090	3.84	1114	3.97
4800	916	2.88	941	3.05	964	3.22	987	3.38	1009	3.54	1031	3.69	1053	3.83	1076	3.97	1099	4.10	1123	4.23

BLOWER DATA EL150KA

All data is measured external to the unit with dry coil and standard 2 in. air filters in place.
FOR ALL UNITS ADD:
1 - Wet indoor coil air resistance of selected unit.
2 - Any field installed accessories air resistance (electric heat, economizer, etc.) See page 15.
Then determine from table the blower motor hp and drive rpm required. See page 14 for blower drive specifications.

Air Volume cfm	STATIC PRESSURE EXTERNAL TO UNIT - Inches Water Gauge																	
	0.2		0.3		0.4		0.5		0.6		0.7		0.8		0.9		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2600	511	0.54	541	0.62	573	0.69	607	0.77	644	0.85	681	0.94	718	1.03	752	1.11	785	1.19
2800	521	0.63	551	0.70	583	0.78	617	0.85	653	0.94	690	1.02	726	1.11	760	1.20	792	1.28
3000	532	0.72	562	0.79	594	0.87	628	0.94	664	1.03	700	1.12	735	1.21	768	1.30	800	1.38
3200	544	0.81	574	0.88	606	0.96	640	1.04	675	1.12	710	1.22	744	1.31	777	1.41	808	1.49
3400	556	0.90	586	0.98	618	1.06	652	1.14	687	1.23	721	1.33	754	1.43	786	1.52	816	1.61
3600	570	1.01	600	1.09	632	1.17	665	1.26	699	1.35	732	1.44	764	1.54	795	1.64	825	1.73
3800	585	1.12	615	1.21	647	1.29	679	1.38	712	1.47	744	1.56	775	1.66	806	1.76	835	1.86
4000	600	1.25	631	1.34	662	1.42	694	1.51	725	1.59	757	1.69	787	1.79	817	1.90	845	2.00
4200	617	1.38	647	1.47	678	1.55	709	1.64	739	1.73	769	1.82	799	1.93	828	2.04	856	2.15
4400	635	1.53	664	1.61	694	1.69	724	1.78	754	1.87	783	1.96	812	2.07	840	2.19	867	2.32
4600	653	1.68	682	1.76	711	1.84	740	1.92	768	2.01	797	2.11	825	2.23	852	2.36	879	2.51
4800	672	1.83	700	1.91	728	1.99	756	2.08	783	2.17	811	2.28	838	2.41	865	2.56	891	2.71
[1] 5000	691	1.99	719	2.07	745	2.16	772	2.25	799	2.36	826	2.48	852	2.62	879	2.77	904	2.94
[1] 5200	711	2.16	737	2.24	763	2.33	789	2.44	815	2.55	841	2.69	867	2.84	893	3.01	917	3.20
[1] 5400	731	2.34	756	2.43	781	2.53	806	2.64	832	2.78	857	2.93	882	3.09	907	3.28	931	3.47
[1] 5600	751	2.53	775	2.63	799	2.74	824	2.87	849	3.02	874	3.19	898	3.37	922	3.57	946	3.77
[1] 5800	770	2.74	794	2.85	818	2.98	842	3.13	866	3.29	891	3.47	915	3.68	938	3.89	961	4.10
[1] 6000	790	2.97	813	3.10	837	3.25	860	3.41	884	3.59	908	3.79	932	4.01	955	4.23	977	4.45

[1] Airflow exceeding 400 cfm per ton is not recommended in high humidity applications.

Air Volume cfm	STATIC PRESSURE EXTERNAL TO UNIT - Inches Water Gauge																	
	1.1		1.2		1.3		1.4		1.5		1.6		1.7		1.8		1.9		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2600	816	1.26	846	1.33	875	1.41	902	1.49	928	1.57	954	1.66	978	1.75	1003	1.83	1027	1.92	1051	2.01
2800	823	1.36	853	1.43	881	1.52	908	1.60	934	1.69	959	1.79	984	1.88	1008	1.97	1032	2.07	1056	2.16
3000	830	1.46	859	1.54	887	1.63	914	1.73	940	1.83	965	1.93	990	2.03	1014	2.13	1038	2.22	1062	2.32
3200	838	1.57	867	1.66	894	1.76	920	1.86	946	1.97	971	2.08	996	2.18	1020	2.29	1044	2.39	1068	2.49
3400	846	1.69	874	1.79	901	1.89	927	2.00	953	2.12	978	2.24	1002	2.35	1026	2.46	1050	2.57	1074	2.68
3600	854	1.82	882	1.92	909	2.04	935	2.16	960	2.29	984	2.41	1008	2.53	1032	2.65	1056	2.76	1080	2.87
3800	864	1.96	891	2.07	917	2.20	942	2.33	967	2.46	991	2.59	1015	2.72	1039	2.84	1062	2.96	1086	3.07
4000	873	2.11	900	2.24	925	2.37	950	2.51	975	2.65	998	2.79	1022	2.92	1045	3.04	1069	3.16	1092	3.28
4200	883	2.28	909	2.41	934	2.56	959	2.70	982	2.85	1006	2.99	1029	3.13	1052	3.25	1075	3.38	1099	3.50
4400	894	2.46	919	2.61	944	2.76	967	2.91	991	3.06	1014	3.21	1037	3.35	1059	3.48	1083	3.60	1106	3.73
4600	905	2.66	930	2.82	953	2.98	977	3.14	1000	3.29	1022	3.44	1045	3.58	1067	3.71	1090	3.84	1114	3.97
4800	916	2.88	941	3.05	964	3.22	987	3.38	1009	3.54	1031	3.69	1053	3.83	1076	3.97	1099	4.10	1123	4.23
[1] 5000	929	3.12	952	3.30	975	3.47	997	3.64	1019	3.80	1041	3.95	1063	4.10	1085	4.23	1108	4.37	1132	4.50
[1] 5200	941	3.38	964	3.57	987	3.75	1008	3.92	1030	4.08	1051	4.23	1073	4.38	1095	4.51	1118	4.65	1142	4.78
[1] 5400	955	3.67	977	3.86	999	4.04	1020	4.21	1041	4.37	1063	4.53	1084	4.67	1106	4.81	1129	4.94	1153	5.08
[1] 5600	969	3.97	990	4.17	1012	4.35	1033	4.52	1054	4.68	1074	4.84	1096	4.98	1117	5.11	1140	5.25	1165	5.38
[1] 5800	983	4.30	1005	4.50	1025	4.68	1046	4.85	1066	5.01	1087	5.16	1108	5.30	1130	5.43	1153	5.57	1177	5.70
[1] 6000	998	4.65	1019	4.84	1040	5.03	1060	5.20	1080	5.35	1100	5.50	1121	5.63	1143	5.76	1166	5.89	1190	6.03

[1] Airflow exceeding 400 cfm per ton is not recommended in high humidity applications.

BLOWER DATA EL180KA

All data is measured external to the unit with dry coil and standard 2 in. air filters in place.
FOR ALL UNITS ADD:
1 - Wet indoor coil air resistance of selected unit.
2 - Any field installed accessories air resistance (electric heat, economizer, etc.) See page 15.
Then determine from table the blower motor hp and drive rpm required. See page 14 for blower drive specifications.

Air Volume cfm	STATIC PRESSURE EXTERNAL TO UNIT - Inches Water Gauge																	
	0.2		0.3		0.4		0.5		0.6		0.7		0.8		0.9		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3200	421	0.48	471	0.62	521	0.74	573	0.85	624	0.96	663	1.11	692	1.28	724	1.44	756	1.57
3400	428	0.53	478	0.67	528	0.79	580	0.90	630	1.02	668	1.18	697	1.35	729	1.51	761	1.65
3600	436	0.58	485	0.72	535	0.85	587	0.96	636	1.08	673	1.25	701	1.42	733	1.59	766	1.73
3800	444	0.63	493	0.78	542	0.91	594	1.02	642	1.15	678	1.32	706	1.50	738	1.67	770	1.82
4000	452	0.69	501	0.84	550	0.97	601	1.08	648	1.22	683	1.39	711	1.58	743	1.75	775	1.90
4200	461	0.75	509	0.90	558	1.03	608	1.15	655	1.29	688	1.47	715	1.66	748	1.83	781	1.99
4400	470	0.82	518	0.96	566	1.10	616	1.22	662	1.36	694	1.55	720	1.75	753	1.92	786	2.08
4600	480	0.89	527	1.03	575	1.17	624	1.29	669	1.44	700	1.63	726	1.84	758	2.01	792	2.18
4800	490	0.96	537	1.11	584	1.24	633	1.37	676	1.52	706	1.72	731	1.93	764	2.11	798	2.27
5000	501	1.04	547	1.18	594	1.32	642	1.45	684	1.61	712	1.81	736	2.02	769	2.21	804	2.37
5200	512	1.13	557	1.26	604	1.40	651	1.53	692	1.70	719	1.91	742	2.13	775	2.31	810	2.48
5400	524	1.22	568	1.35	614	1.48	662	1.62	701	1.80	726	2.01	749	2.23	781	2.42	816	2.59
5600	536	1.31	580	1.44	625	1.58	672	1.72	710	1.90	734	2.12	755	2.35	788	2.54	823	2.71
5800	549	1.41	592	1.54	637	1.67	683	1.81	720	2.00	742	2.24	763	2.47	795	2.66	830	2.84
6000	562	1.52	605	1.64	650	1.77	695	1.92	730	2.11	750	2.36	770	2.61	802	2.80	837	2.98
6200	577	1.61	618	1.74	662	1.88	706	2.03	739	2.24	759	2.50	778	2.75	810	2.94	844	3.12
6400	592	1.71	632	1.85	675	2.00	717	2.17	748	2.39	767	2.65	787	2.90	819	3.09	852	3.27
6600	607	1.81	646	1.98	687	2.15	727	2.34	757	2.56	776	2.82	797	3.06	829	3.25	861	3.43
6800	622	1.93	659	2.12	697	2.32	736	2.53	764	2.75	785	3.00	807	3.23	838	3.41	870	3.59
7000	636	2.07	671	2.29	707	2.52	743	2.74	771	2.96	793	3.18	817	3.40	848	3.58	879	3.76
7200	649	2.25	682	2.49	716	2.74	750	2.97	778	3.18	802	3.38	828	3.58	858	3.76	889	3.93

Air Volume cfm	STATIC PRESSURE EXTERNAL TO UNIT - Inches Water Gauge																	
	1.1		1.2		1.3		1.4		1.5		1.6		1.7		1.8		1.9		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3200	789	1.70	822	1.82	856	1.93	888	2.06	918	2.20	947	2.34	976	2.49	1003	2.64	1029	2.80	1054	2.97
3400	794	1.78	827	1.90	860	2.02	892	2.15	922	2.29	951	2.43	979	2.59	1006	2.74	1032	2.91	1057	3.07
3600	799	1.86	832	1.99	864	2.11	896	2.24	926	2.38	954	2.53	982	2.69	1009	2.85	1035	3.01	1060	3.18
3800	803	1.95	836	2.08	869	2.20	900	2.34	930	2.48	958	2.64	985	2.79	1012	2.96	1038	3.12	1063	3.29
4000	808	2.04	841	2.17	874	2.30	905	2.44	934	2.59	962	2.74	989	2.90	1015	3.07	1040	3.23	1066	3.40
4200	814	2.13	847	2.26	879	2.40	909	2.54	938	2.69	965	2.85	992	3.02	1018	3.18	1043	3.35	1068	3.52
4400	820	2.23	853	2.36	884	2.50	914	2.65	942	2.80	969	2.97	995	3.14	1021	3.30	1046	3.47	1071	3.64
4600	826	2.32	858	2.46	890	2.61	919	2.76	947	2.92	973	3.09	999	3.26	1024	3.43	1049	3.60	1074	3.77
4800	832	2.42	865	2.57	895	2.72	924	2.87	951	3.04	977	3.21	1002	3.39	1027	3.56	1052	3.73	1077	3.89
5000	838	2.53	871	2.68	901	2.83	929	3.00	955	3.17	981	3.34	1006	3.52	1031	3.69	1056	3.86	1080	4.03
5200	844	2.64	877	2.80	907	2.96	934	3.12	960	3.30	985	3.47	1010	3.65	1034	3.82	1059	3.99	1084	4.16
5400	851	2.76	883	2.92	912	3.08	939	3.26	964	3.43	989	3.61	1014	3.79	1038	3.96	1063	4.13	1088	4.30
5600	857	2.88	889	3.05	918	3.22	944	3.39	969	3.58	993	3.75	1018	3.93	1043	4.11	1067	4.28	1092	4.45
5800	863	3.01	895	3.18	924	3.36	950	3.54	974	3.72	998	3.90	1023	4.08	1047	4.26	1072	4.44	1097	4.61
6000	870	3.15	901	3.32	929	3.50	955	3.69	979	3.87	1003	4.06	1028	4.24	1052	4.42	1077	4.60	1102	4.78
6200	877	3.30	908	3.47	935	3.65	961	3.84	984	4.04	1009	4.23	1033	4.41	1058	4.60	1083	4.78	1107	4.96
6400	885	3.45	914	3.62	942	3.81	967	4.01	990	4.21	1015	4.41	1039	4.60	1064	4.78	1088	4.97	1113	5.15
6600	892	3.60	921	3.78	948	3.98	973	4.18	996	4.39	1021	4.59	1045	4.79	1070	4.98	1095	5.16	1119	5.35
6800	900	3.76	929	3.95	954	4.15	979	4.37	1003	4.58	1027	4.79	1052	4.99	1076	5.18	1101	5.37	1126	5.55
7000	909	3.93	936	4.12	961	4.33	985	4.56	1009	4.78	1034	4.99	1058	5.19	1083	5.39	1108	5.57	1132	5.76
7200	917	4.11	943	4.31	968	4.53	992	4.75	1016	4.98	1040	5.20	1065	5.40	1090	5.60	1114	5.78	1139	5.97

BLOWER DATA EL240KA

All data is measured external to the unit with dry coil and standard 2 in. air filters in place.
FOR ALL UNITS ADD:
1 - Wet indoor coil air resistance of selected unit.
2 - Any field installed accessories air resistance (electric heat, economizer, etc.) See page 15.
Then determine from table the blower motor hp and drive rpm required. See page 14 for blower drive specifications.

Air Volume cfm	STATIC PRESSURE EXTERNAL TO UNIT - Inches Water Gauge																	
	0.2		0.3		0.4		0.5		0.6		0.7		0.8		0.9		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4200	483	0.82	532	0.96	581	1.08	630	1.21	674	1.36	705	1.56	731	1.75	763	1.93	796	2.08
4400	494	0.88	543	1.02	591	1.15	640	1.28	681	1.45	711	1.65	737	1.85	769	2.02	803	2.17
4600	506	0.95	554	1.09	601	1.22	649	1.36	689	1.54	717	1.74	743	1.94	775	2.12	809	2.27
4800	518	1.02	566	1.16	612	1.30	658	1.45	696	1.64	724	1.85	749	2.04	782	2.22	816	2.37
5000	531	1.10	578	1.24	623	1.38	668	1.55	704	1.75	730	1.96	756	2.14	789	2.32	823	2.48
5200	545	1.18	590	1.32	635	1.47	677	1.66	711	1.87	737	2.07	763	2.25	796	2.43	830	2.59
5400	559	1.27	603	1.41	646	1.58	686	1.78	719	2.00	744	2.20	770	2.37	803	2.55	837	2.71
5600	573	1.36	615	1.51	657	1.69	695	1.91	726	2.13	752	2.33	778	2.50	811	2.68	845	2.84
5800	587	1.47	628	1.62	668	1.81	705	2.04	735	2.27	760	2.46	787	2.63	819	2.81	853	2.98
6000	601	1.58	640	1.74	679	1.94	714	2.18	744	2.41	769	2.60	796	2.78	828	2.96	861	3.13
6200	615	1.69	653	1.87	690	2.09	724	2.33	752	2.56	778	2.75	805	2.92	837	3.11	870	3.28
6400	629	1.82	665	2.02	700	2.25	733	2.50	761	2.72	788	2.91	815	3.08	847	3.26	879	3.43
6600	643	1.96	676	2.19	710	2.43	742	2.68	771	2.90	798	3.08	826	3.24	857	3.42	889	3.59
6800	655	2.13	688	2.37	720	2.63	752	2.88	780	3.08	808	3.25	837	3.41	868	3.59	898	3.76
7000	667	2.32	699	2.58	730	2.84	761	3.08	790	3.27	819	3.43	849	3.59	879	3.76	908	3.94
7200	679	2.52	710	2.79	741	3.06	771	3.30	801	3.47	830	3.62	860	3.77	889	3.94	918	4.12
7400	691	2.75	721	3.02	752	3.29	782	3.52	812	3.67	842	3.81	871	3.96	900	4.13	927	4.32
7600	704	2.98	733	3.25	763	3.52	793	3.73	823	3.88	853	4.00	882	4.15	910	4.33	937	4.52
7800	716	3.21	745	3.48	775	3.74	805	3.94	835	4.08	864	4.20	893	4.35	920	4.53	946	4.73
[1] 8000	730	3.44	758	3.70	787	3.95	817	4.15	846	4.29	876	4.41	904	4.56	930	4.74	955	4.95
[1] 8200	743	3.68	771	3.93	800	4.16	829	4.36	858	4.49	887	4.62	914	4.78	940	4.96	965	5.17
[1] 8400	757	3.92	784	4.16	812	4.38	841	4.57	870	4.71	898	4.84	925	5.00	950	5.19	974	5.40
[1] 8600	770	4.16	798	4.39	825	4.61	854	4.79	882	4.93	910	5.06	936	5.22	960	5.42	983	5.63

[1] Airflow exceeding 400 cfm per ton is not recommended in high humidity applications.

Air Volume cfm	STATIC PRESSURE EXTERNAL TO UNIT - Inches Water Gauge																	
	1.1		1.2		1.3		1.4		1.5		1.6		1.7		1.8		1.9		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4200	829	2.21	862	2.33	893	2.46	923	2.61	950	2.76	977	2.93	1003	3.10	1029	3.26	1054	3.43	1079	3.60
4400	836	2.31	868	2.44	899	2.57	928	2.72	955	2.88	982	3.05	1008	3.22	1033	3.39	1058	3.56	1083	3.73
4600	843	2.41	875	2.54	906	2.69	934	2.84	960	3.01	986	3.18	1012	3.35	1037	3.52	1062	3.69	1087	3.86
4800	850	2.52	882	2.66	912	2.80	939	2.97	965	3.14	991	3.31	1016	3.48	1041	3.66	1066	3.82	1091	3.99
5000	857	2.63	889	2.77	918	2.93	945	3.10	970	3.27	995	3.45	1020	3.62	1045	3.79	1070	3.96	1095	4.13
5200	864	2.74	895	2.90	924	3.06	950	3.23	975	3.41	1000	3.59	1025	3.76	1050	3.93	1075	4.10	1099	4.27
5400	871	2.87	902	3.03	930	3.20	956	3.38	980	3.56	1005	3.73	1030	3.91	1055	4.08	1079	4.25	1104	4.42
5600	878	3.00	909	3.17	937	3.34	962	3.52	986	3.71	1011	3.89	1035	4.06	1060	4.24	1085	4.41	1110	4.58
5800	886	3.15	916	3.31	943	3.49	968	3.68	992	3.86	1016	4.05	1041	4.22	1066	4.40	1091	4.57	1115	4.75
6000	893	3.29	923	3.47	950	3.65	974	3.84	998	4.03	1023	4.22	1047	4.40	1072	4.58	1097	4.75	1122	4.93
6200	901	3.45	931	3.62	957	3.81	981	4.01	1005	4.21	1029	4.40	1054	4.58	1079	4.76	1103	4.94	1128	5.12
6400	910	3.60	938	3.79	964	3.99	988	4.19	1012	4.40	1036	4.59	1061	4.77	1086	4.96	1110	5.13	1135	5.32
6600	919	3.77	946	3.96	971	4.17	995	4.38	1019	4.59	1044	4.79	1068	4.98	1093	5.16	1117	5.34	1142	5.52
6800	927	3.94	954	4.15	979	4.36	1003	4.58	1027	4.80	1051	5.00	1076	5.19	1100	5.37	1125	5.55	1150	5.73
7000	936	4.13	962	4.34	986	4.56	1010	4.79	1034	5.01	1059	5.21	1084	5.40	1108	5.58	1132	5.76	1157	5.94
7200	945	4.32	970	4.54	994	4.77	1018	5.00	1042	5.22	1067	5.43	1091	5.62	1116	5.80	1140	5.98	1165	6.16
7400	953	4.52	978	4.75	1002	4.99	1026	5.22	1050	5.44	1075	5.65	1099	5.84	1124	6.02	1148	6.20	1172	6.38
7600	962	4.73	986	4.97	1010	5.21	1034	5.44	1058	5.66	1083	5.87	1107	6.06	1132	6.25	1156	6.43	1180	6.61
7800	970	4.95	994	5.19	1018	5.43	1042	5.67	1066	5.89	1091	6.10	1116	6.29	1140	6.48	1164	6.65	1188	6.84
[1] 8000	979	5.17	1002	5.41	1026	5.66	1050	5.90	1075	6.12	1099	6.33	1124	6.52	1148	6.71	1172	6.89	1196	7.07
[1] 8200	988	5.40	1011	5.64	1034	5.89	1058	6.13	1083	6.36	1108	6.56	1132	6.76	1156	6.94	1180	7.12	1204	7.30
[1] 8400	997	5.63	1019	5.88	1043	6.13	1067	6.37	1092	6.59	1116	6.80	1141	7.00	1165	7.18	1188	7.36	1212	7.54
[1] 8600	1006	5.87	1028	6.12	1051	6.37	1075	6.61	1100	6.84	1125	7.05	1149	7.24	1173	7.42	1197	7.60	1221	7.78

[1] Airflow exceeding 400 cfm per ton is not recommended in high humidity applications.

BLOWER DATA

BLOWER DRIVE SPECIFICATIONS

Static	RPM Range	Motor HP		072	090	120	150	180	240
		Nominal	Maximum						
Low	563 - 798	1.5	1.5	O	- - -	- - -	- - -	- - -	- - -
Standard	798 - 1033	1.5	1.5	S	- - -	- - -	- - -	- - -	- - -
Low	562 - 796	2	2	- - -	O	- - -	- - -	- - -	- - -
Standard	796 - 1030	2	2	- - -	S	- - -	- - -	- - -	- - -
Low	560 - 793	2	2	- - -	- - -	O	- - -	- - -	- - -
Standard	793 - 1027	3	3	- - -	- - -	S	- - -	- - -	- - -
Low	653 - 887	3	3	- - -	- - -	- - -	O	- - -	- - -
Standard	846 - 1081	5	5	- - -	- - -	- - -	S	- - -	- - -
Low	598 - 820	3	3	- - -	- - -	- - -	- - -	O	- - -
Standard	820 - 1041	5	5	- - -	- - -	- - -	- - -	S	- - -
Low	689 - 875	5	5	- - -	- - -	- - -	- - -	- - -	O
Standard	810 - 1036	7.5	7.5	- - -	- - -	- - -	- - -	- - -	S

NOTE - Using total air volume and system static pressure requirements, determine from blower performance tables rpm and motor horsepower required.

Maximum usable horsepower of motors furnished by Lennox are shown. In Canada, nominal motor horsepower is also maximum usable motor horsepower. If motors of comparable horsepower are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

S - Factory installed standard

O - Factory Installed with extended lead time (available with 460 volt models only).

BLOWER MOTOR ELECTRICAL DATA

		Model	072	090	120	150	180	240
1.5 HP Blower Motor	Maximum Overcurrent Protection / Minimum Circuit Ampacity	208/230/-60hz-3ph	15 / 9	- - -	- - -	- - -	- - -	- - -
		460V-60hz-3ph	15 / 4	- - -	- - -	- - -	- - -	- - -
		575V-60hz-3ph	15 / 3	- - -	- - -	- - -	- - -	- - -
	Blower Motor Full Load Amps	208/230/-60hz-3ph	6.6	- - -	- - -	- - -	- - -	- - -
		460V-60hz-3ph	3	- - -	- - -	- - -	- - -	- - -
		575V-60hz-3ph	2.4	- - -	- - -	- - -	- - -	- - -
2 HP Blower Motor	Maximum Overcurrent Protection / Minimum Circuit Ampacity	208/230/-60hz-3ph	- - -	15 / 10	- - -	- - -	- - -	- - -
		460V-60hz-3ph	- - -	15 / 5	15 / 5	- - -	- - -	- - -
		575V-60hz-3ph	- - -	15 / 4	- - -	- - -	- - -	- - -
	Blower Motor Full Load Amps	208/230/-60hz-3ph	- - -	7.5	- - -	- - -	- - -	- - -
		460V-60hz-3ph	- - -	3.4	3.4	- - -	- - -	- - -
		575V-60hz-3ph	- - -	2.7	- - -	- - -	- - -	- - -
3 HP Blower Motor	Maximum Overcurrent Protection / Minimum Circuit Ampacity	208/230/-60hz-3ph	- - -	- - -	20 / 14	- - -	- - -	- - -
		460V-60hz-3ph	- - -	- - -	15 / 6	15 / 6	15 / 6	- - -
		575V-60hz-3ph	- - -	- - -	15 / 5	- - -	- - -	- - -
	Blower Motor Full Load Amps	208/230/-60hz-3ph	- - -	- - -	10.6	- - -	- - -	- - -
		460V-60hz-3ph	- - -	- - -	4.8	4.8	4.8	- - -
		575V-60hz-3ph	- - -	- - -	3.9	- - -	- - -	- - -
5 HP Blower Motor	Maximum Overcurrent Protection / Minimum Circuit Ampacity	208/230/-60hz-3ph	- - -	- - -	- - -	35 / 21	35 / 21	- - -
		460V-60hz-3ph	- - -	- - -	- - -	15 / 10	15 / 10	15 / 10
		575V-60hz-3ph	- - -	- - -	- - -	15 / 8	15 / 8	- - -
	Blower Motor Full Load Amps	208/230/-60hz-3ph	- - -	- - -	- - -	16.7	16.7	- - -
		460V-60hz-3ph	- - -	- - -	- - -	7.6	7.6	7.6
		575V-60hz-3ph	- - -	- - -	- - -	6.1	6.1	- - -
7.5 HP Blower Motor	Maximum Overcurrent Protection / Minimum Circuit Ampacity	208/230/-60hz-3ph	- - -	- - -	- - -	- - -	- - -	50 / 31
		460V-60hz-3ph	- - -	- - -	- - -	- - -	- - -	20 / 14
		575V-60hz-3ph	- - -	- - -	- - -	- - -	- - -	20 / 12
	Blower Motor Full Load Amps	208/230/-60hz-3ph	- - -	- - -	- - -	- - -	- - -	24.2
		460V-60hz-3ph	- - -	- - -	- - -	- - -	- - -	11
		575V-60hz-3ph	- - -	- - -	- - -	- - -	- - -	9

BLOWER DATA

EL072-090 ACCESSORY AIR RESISTANCE

Air Volume (cfm)	Total Resistance - in. w.g.						
	Wet Coil		4-Inch Filters		Economizer	Electric Heat	Hot Water Coil
	072	090	MERV 8	MERV 13			
1600	0.05	0.07	0.00	0.03	0.02	0.00	0.08
1700	0.06	0.08	0.00	0.03	0.03	0.00	0.09
1800	0.06	0.09	0.00	0.03	0.03	0.00	0.10
1900	0.07	0.09	0.00	0.03	0.04	0.02	0.12
2000	0.07	0.10	0.00	0.03	0.04	0.02	0.13
2100	0.08	0.11	0.00	0.04	0.04	0.02	0.14
2200	0.08	0.11	0.00	0.04	0.05	0.02	0.15
2300	0.09	0.12	0.00	0.04	0.05	0.03	0.16
2400	0.10	0.13	0.00	0.05	0.05	0.03	0.17
2500	0.10	0.14	0.00	0.05	0.06	0.03	0.18
2600	0.11	0.15	0.00	0.06	0.06	0.03	0.19
2700	0.12	0.16	0.00	0.06	0.07	0.04	0.20
2800	0.12	0.17	0.00	0.07	0.07	0.04	0.21
2900	0.13	0.18	0.00	0.07	0.08	0.04	0.23
3000	0.14	0.19	0.00	0.08	0.08	0.05	0.24
3100	0.14	0.20	0.00	0.08	0.09	0.05	0.25
3200	0.15	0.21	0.00	0.09	0.09	0.05	0.27
3300	0.16	0.22	0.00	0.10	0.10	0.06	0.28
3400	0.17	0.23	0.00	0.10	0.10	0.06	0.29
3500	0.18	0.24	0.00	0.11	0.11	0.06	0.31
3600	0.18	0.25	0.00	0.12	0.12	0.06	0.32

EL120-150 ACCESSORY AIR RESISTANCE

Air Volume (cfm)	Total Resistance - in. w.g.						
	Wet Coil		4-Inch Filters		Economizer	Electric Heat	Hot Water Coil
	120	150	MERV 8	MERV 13			
2200	0.07	0.07	0.00	0.01	0.03	0.03	0.15
2400	0.08	0.08	0.00	0.02	0.03	0.03	0.17
2600	0.09	0.09	0.00	0.02	0.03	0.04	0.20
2800	0.10	0.10	0.00	0.02	0.04	0.04	0.22
3000	0.11	0.11	0.00	0.03	0.04	0.05	0.24
3200	0.12	0.12	0.00	0.03	0.04	0.05	0.27
3400	0.14	0.14	0.00	0.03	0.05	0.06	0.29
3600	0.15	0.15	0.00	0.03	0.05	0.06	0.32
3800	0.16	0.16	0.00	0.04	0.05	0.06	0.35
4000	0.18	0.18	0.00	0.04	0.06	0.08	0.38
4200	0.19	0.19	0.00	0.05	0.06	0.08	0.41
4400	0.20	0.20	0.00	0.06	0.07	0.09	0.44
4600	0.22	0.22	0.00	0.07	0.07	0.09	0.47
4800	0.23	0.23	0.00	0.08	0.08	0.10	0.51
5000	0.25	0.25	0.00	0.10	0.08	0.10	0.54
5200	0.27	0.27	0.00	0.12	0.09	0.11	0.58
5400	0.28	0.28	0.00	0.14	0.09	0.11	0.61
5600	0.30	0.30	0.00	0.17	0.10	0.13	0.65
5800	0.32	0.32	0.00	0.20	0.10	0.13	0.69
6000	0.33	0.33	0.00	0.24	0.11	0.14	0.72

BLOWER DATA

EL180-240 ACCESSORY AIR RESISTANCE

Air Volume (cfm)	Total Resistance - in. w.g.						
	Wet Coil		4-Inch Filters		Economizer	Electric Heat	Hot Water Coil
	180	240	MERV 8	MERV 13			
3250	0.07	0.06	0.00	0.01	0.02	0.04	0.16
3500	0.07	0.07	0.00	0.01	0.02	0.05	0.18
3750	0.08	0.08	0.00	0.02	0.03	0.06	0.20
4000	0.08	0.09	0.00	0.02	0.03	0.06	0.22
4250	0.09	0.09	0.00	0.02	0.03	0.07	0.23
4500	0.08	0.11	0.00	0.03	0.05	0.06	0.24
4750	0.09	0.12	0.00	0.03	0.06	0.08	0.26
5000	0.10	0.13	0.00	0.03	0.07	0.09	0.28
5250	0.11	0.14	0.00	0.04	0.07	0.09	0.31
5500	0.11	0.15	0.00	0.04	0.08	0.11	0.33
5750	0.12	0.16	0.00	0.04	0.08	0.11	0.35
6000	0.13	0.18	0.00	0.05	0.10	0.12	0.38
6250	0.14	0.19	0.00	0.05	0.11	0.14	0.40
6500	0.15	0.20	0.00	0.06	0.11	0.14	0.43
6750	0.16	0.21	0.00	0.06	0.12	0.15	0.46
7000	0.17	0.22	0.00	0.07	0.12	0.15	0.48
7250	0.18	0.24	0.00	0.07	0.13	0.17	0.51
7500	0.19	0.25	0.00	0.08	0.13	0.17	0.54
7750	0.19	0.26	0.00	0.09	0.14	0.18	0.57
8000	0.21	0.28	0.00	0.09	0.16	0.20	0.60
8250	0.22	0.29	0.00	0.10	0.16	0.20	0.63
8500	0.23	0.31	0.00	0.11	0.17	0.21	0.66
8750	0.24	0.32	0.00	0.12	0.17	0.21	0.69
9000	0.25	0.33	0.00	0.14	0.18	0.23	0.72
9250	0.26	0.35	0.00	0.15	0.19	0.24	0.76
9500	0.27	0.36	0.00	0.16	0.20	0.26	0.79
9750	0.28	0.38	0.00	0.18	0.22	0.27	0.82
10,000	0.29	0.40	0.00	0.19	0.23	0.29	0.86

OPTIONAL ELECTRIC HEAT DATA — EL072KA

Electric Heat Size	No. of Steps	Volts Input	kW Input	[1] Btuh Output	[2] Total Unit + Electric Heat Minimum Circuit Ampacity	Total Unit + Electric Heat Maximum Overcurrent Protection
					1.5 hp	1.5 hp
10 kW	1	208	7.5	25,600	35	40
	1	220	8.4	28,700	38	40
		230	9.2	31,400		
		240	10	34,100		
	1	440	8.4	28,700	19	20
		460	9.2	31,400		
		480	10	34,100		
	1	550	8.4	28,700	15	20
		575	9.2	31,400		
		600	10	34,100		
15 kW	1	208	11.3	38,400	48	50
	1	220	12.6	43,000	53	60
		230	13.5	47,000		
		240	15	51,200		
	1	440	12.6	43,000	27	30
		460	13.5	47,000		
		480	15	51,200		
	1	550	12.6	43,000	21	25
		575	13.5	47,000		
		600	15	51,200		
25 kW	[3] 2	208	18.8	64,100	74	80
	[3] 2	220	21	71,700	83	90
		230	23	78,300		
		240	25	85,300		
	1	440	21	71,700	42	45
		460	23	78,300		
		480	25	85,300		
	1	550	21	71,700	34	35
		575	23	78,300		
		600	25	85,300		

[1] Electric heater capacity only - does not include additional blower motor heat capacity.
[2] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.
[3] May be used with two stage control (field provided).

OPTIONAL ELECTRIC HEAT DATA — EL090KA

Electric Heat Size	No. of Steps	Volts Input	kW Input	[1] Btuh Output	[2] Total Unit + Electric Heat Minimum Circuit Ampacity	Total Unit + Electric Heat Maximum Overcurrent Protection
					2 hp	2 hp
10 kW	1	208	7.5	25,600	36	40
	1	220	8.4	28,700	39	40
		230	9.2	31,400		
		240	10	34,100		
	1	440	8.4	28,700	20	25
		460	9.2	31,400		
		480	10	34,100		
	1	550	8.4	28,700	16	20
		575	9.2	31,400		
		600	10	34,100		
15 kW	1	208	11.3	38,400	49	50
	1	220	12.6	43,000	54	60
		230	13.5	47,000		
		240	15	51,200		
	1	440	12.6	43,000	27	30
		460	13.5	47,000		
		480	15	51,200		
	1	550	12.6	43,000	22	25
		575	13.5	47,000		
		600	15	51,200		
25 kW	[3] 2	208	18.8	64,100	75	80
	[3] 2	220	21	71,700	84	90
		230	23	78,300		
		240	25	85,300		
	1	440	21	71,700	42	45
		460	23	78,300		
		480	25	85,300		
	1	550	21	71,700	34	35
		575	23	78,300		
		600	25	85,300		
35 kW	[3] 2	208	24.9	85,300	97	100
	[3] 2	220	28	95,500	109	110
		230	30.6	104,400		
		240	33.3	113,700		
	1	440	28	95,500	55	60
		460	30.6	104,400		
		480	33.3	113,700		
	1	550	28	95,500	44	45
		575	30.6	104,400		
		600	33.3	113,700		

[1] Electric heater capacity only - does not include additional blower motor heat capacity.

[2] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

[3] May be used with two stage control (field provided).

OPTIONAL ELECTRIC HEAT DATA — EL120KA

Electric Heat Size	No. of Steps	Volts Input	kW Input	[1] Btuh Output	[2] Total Unit + Electric Heat Minimum Circuit Ampacity		Total Unit + Electric Heat Maximum Overcurrent Protection	
					2 hp	3 hp	2 hp	3 hp
10 kW	1	208	7.5	25,600	- - -	40	- - -	45
	1	220	8.4	28,700	- - -	43	- - -	50
		230	9.2	31,400				
		240	10	34,100				
	1	440	8.4	28,700	20	21	20	25
		460	9.2	31,400				
		480	10	34,100				
	1	550	8.4	28,700	- - -	17	- - -	20
		575	9.2	31,400				
		600	10	34,100				
15 kW	1	208	11.3	38,400	- - -	53	- - -	60
	1	220	12.6	43,000	- - -	58	- - -	60
		230	13.5	47,000				
		240	15	51,200				
	1	440	12.6	43,000	27	29	30	30
		460	13.5	47,000				
		480	15	51,200				
	1	550	12.6	43,000	- - -	23	- - -	25
		575	13.5	47,000				
		600	15	51,200				
25 kW	[3] 2	208	18.8	64,100	- - -	79	- - -	80
	[3] 2	220	21	71,700	- - -	88	- - -	90
		230	23	78,300				
		240	25	85,300				
	1	440	21	71,700	42	44	45	45
		460	23	78,300				
		480	25	85,300				
	1	550	21	71,700	- - -	35	- - -	35
		575	23	78,300				
		600	25	85,300				
35 kW	[3] 2	208	24.9	85,300	- - -	100	- - -	100
	[3] 2	220	28	95,500	- - -	113	- - -	125
		230	30.6	104,400				
		240	33.3	113,700				
	1	440	28	95,500	55	57	60	60
		460	30.6	104,400				
		480	33.3	113,700				
	1	550	28	95,500	- - -	45	- - -	45
		575	30.6	104,400				
		600	33.3	113,700				

[1] Electric heater capacity only - does not include additional blower motor heat capacity.

[2] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

[3] May be used with two stage control (field provided).

OPTIONAL ELECTRIC HEAT DATA — EL150KA

Electric Heat Size	No. of Steps	Volts Input	kW Input	[1] Btuh Output	[2] Total Unit + Electric Heat Minimum Circuit Ampacity		Total Unit + Electric Heat Maximum Overcurrent Protection	
					3 hp	5 hp	3 hp	5 hp
10 kW	1	208	7.5	25,600	- - -	47	- - -	60
	1	220	8.4	28,700	- - -	50	- - -	60
		230	9.2	31,400				
		240	10	34,100				
		440	8.4	28,700	21	25	25	30
	1	460	9.2	31,400				
		480	10	34,100				
		550	8.4	28,700	- - -	20	- - -	25
	1	575	9.2	31,400				
		600	10	34,100				
15 kW	1	208	11.3	38,400	- - -	60	- - -	70
	1	220	12.6	43,000	- - -	65	- - -	80
		230	13.5	47,000				
		240	15	51,200				
		440	12.6	43,000	29	32	30	40
	1	460	13.5	47,000				
		480	15	51,200				
	1	550	12.6	43,000	- - -	26	- - -	30
		575	13.5	47,000				
		600	15	51,200				
25 kW	[3] 2	208	18.8	64,100	- - -	86	- - -	90
	[3] 2	220	21	71,700	- - -	95	- - -	100
		230	23	78,300				
		240	25	85,300				
		440	21	71,700	44	48	45	50
	1	460	23	78,300				
		480	25	85,300				
	1	550	21	71,700	- - -	38	- - -	40
		575	23	78,300				
		600	25	85,300				
35 kW	[3] 2	208	24.9	85,300	- - -	108	- - -	110
	[3] 2	220	28	95,500	- - -	120	- - -	125
		230	30.6	104,400				
		240	33.3	113,700				
		440	28	95,500	57	60	60	60
	1	460	30.6	104,400				
		480	33.3	113,700				
	1	550	28	95,500	- - -	48	- - -	50
		575	30.6	104,400				
		600	33.3	113,700				

[1] Electric heater capacity only - does not include additional blower motor heat capacity.

[2] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

[3] May be used with two stage control (field provided).

OPTIONAL ELECTRIC HEAT DATA — EL180KA

Electric Heat Size	No. of Steps	Volts Input	kW Input	[1] Btuh Output	[2] Total Unit + Electric Heat Minimum Circuit Ampacity		Total Unit + Electric Heat Maximum Overcurrent Protection	
					3 hp	5 hp	3 hp	5 hp
20 kW	1	208	14.8	50,600	- - -	73	- - -	80
	1	220	16.5	56,500	- - -	79	- - -	90
		230	18.1	61,800				
		240	19.7	67,300				
		440	16.8	57,500	37	40	40	45
	1	460	18.4	62,900				
		480	20	68,300				
		550	16.8	57,300	- - -	32	- - -	35
	1	575	18.4	62,600				
		600	20	68,300				
30 kW	2	208	22.5	76,900	- - -	99	- - -	110
	2	220	25.2	86,100	- - -	110	- - -	110
		230	27.5	94,100				
		240	30	102,500				
	1	440	25.2	86,100	52	55	60	60
		460	27.5	94,100				
		480	30	102,500				
	1	550	25.2	86,200	- - -	44	- - -	45
		575	27.5	94,200				
		600	30	102,500				
40 kW	2	208	29.3	100,000	- - -	123	- - -	125
	2	220	32.8	112,000	- - -	137	- - -	150
		230	35.8	122,300				
		240	39	133,200				
	1	440	32.8	112,000	65	69	70	70
		460	35.9	122,400				
		480	39	133,200				
	1	550	33.6	114,800	- - -	56	- - -	60
		575	36.7	125,500				
		600	40	136,600				
50 kW	2	208	36.0	123,200	- - -	146	- - -	150
	2	220	40.3	137,700	- - -	164	- - -	175
		230	44.1	150,600				
		240	48	163,900				
	2	440	42	143,400	82	85	90	90
		460	45.9	156,700				
		480	50	170,800				
	2	550	42	143,500	- - -	68	- - -	70
		575	45.9	156,800				
		600	50	170,800				

[1] Electric heater capacity only - does not include additional blower motor heat capacity.

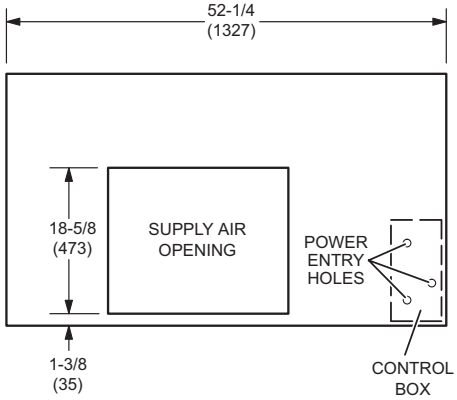
[2] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

OPTIONAL ELECTRIC HEAT DATA — EL240KA

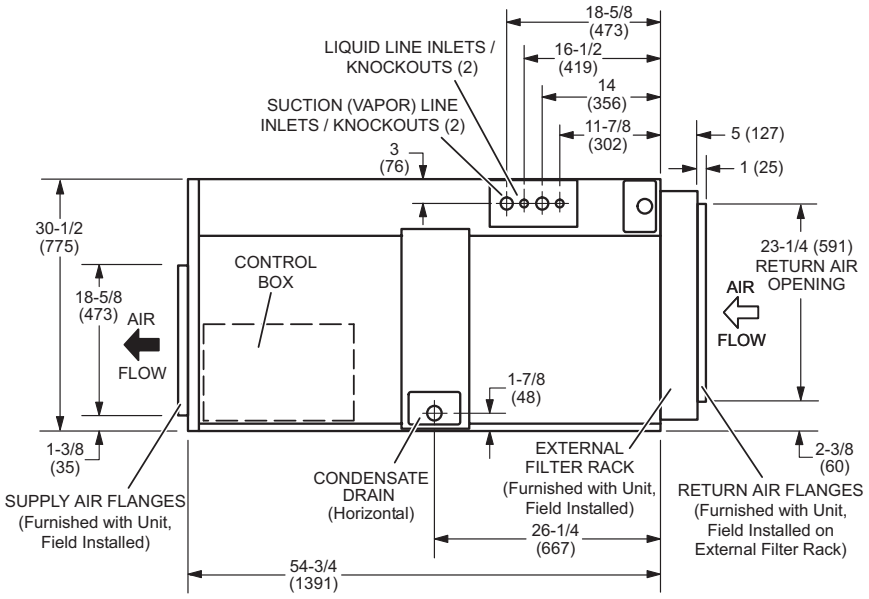
Electric Heat Size	No. of Steps	Volts Input	kW Input	[1] Btuh Output	[2] Total Unit + Electric Heat Minimum Circuit Ampacity		Total Unit + Electric Heat Maximum Overcurrent Protection	
					5 hp	7.5 hp	5 hp	7.5 hp
20 kW	1	208	14.8	50,600	- - -	83	- - -	100
	1	220	16.5	56,500	- - -	87	- - -	100
		230	18.1	61,800				
		240	19.7	67,300				
		440	16.8	57,500	40	44	45	50
	1	460	18.4	62,900				
		480	20	68,300				
		550	16.7	57,300	- - -	36	- - -	40
	1	575	18.4	62,600				
		600	20	68,300				
30 kW	2	208	22.5	76,900	- - -	109	- - -	125
	2	220	25.2	86,100	- - -	118	- - -	125
		230	27.6	94,100				
		240	30	102,500				
		440	25.2	86,100	55	59	60	70
	1	460	27.6	94,100				
		480	30	102,500				
	1	550	25.2	86,100	- - -	48	- - -	50
		575	27.6	94,200				
		600	30	102,500				
40 kW	2	208	29.3	100,000	- - -	132	- - -	150
	2	220	32.8	112,000	- - -	145	- - -	150
		230	35.8	122,300				
		240	39	133,200				
		440	32.8	112,000	69	73	70	80
	1	460	35.9	122,400				
		480	39	133,200				
	1	550	33.6	114,800	- - -	60	- - -	60
		575	36.7	125,500				
		600	40	136,600				
50 kW	2	208	36.0	123,200	- - -	156	- - -	175
	2	220	40.3	137,700	- - -	172	- - -	175
		230	44.1	150,600				
		240	48	163,900				
		440	42	143,400	85	89	90	90
	2	460	45.9	156,700				
		480	50	170,800				
	2	550	42	143,500	- - -	72	- - -	80
		575	45.9	156,800				
		600	50	170,800				

[1] Electric heater capacity only - does not include additional blower motor heat capacity.

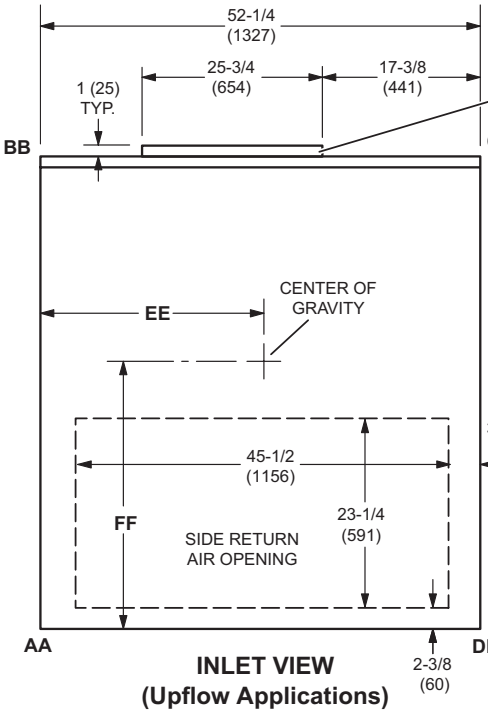
[2] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.



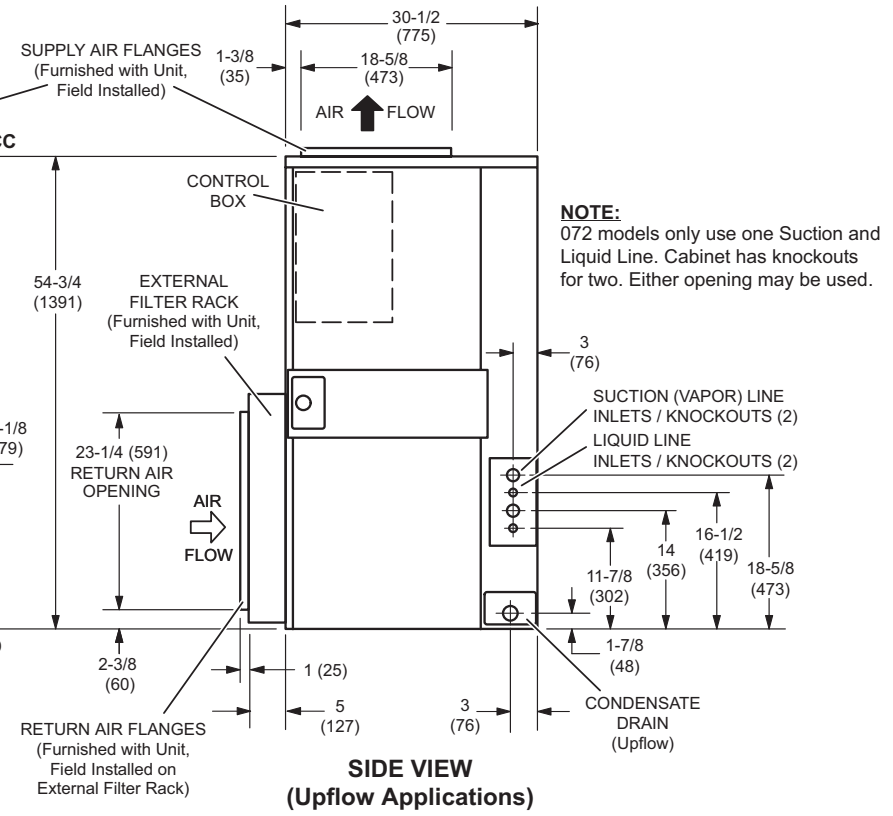
SUPPLY END VIEW
(Upflow or Horizontal Applications)



SIDE VIEW
(Horizontal Applications)



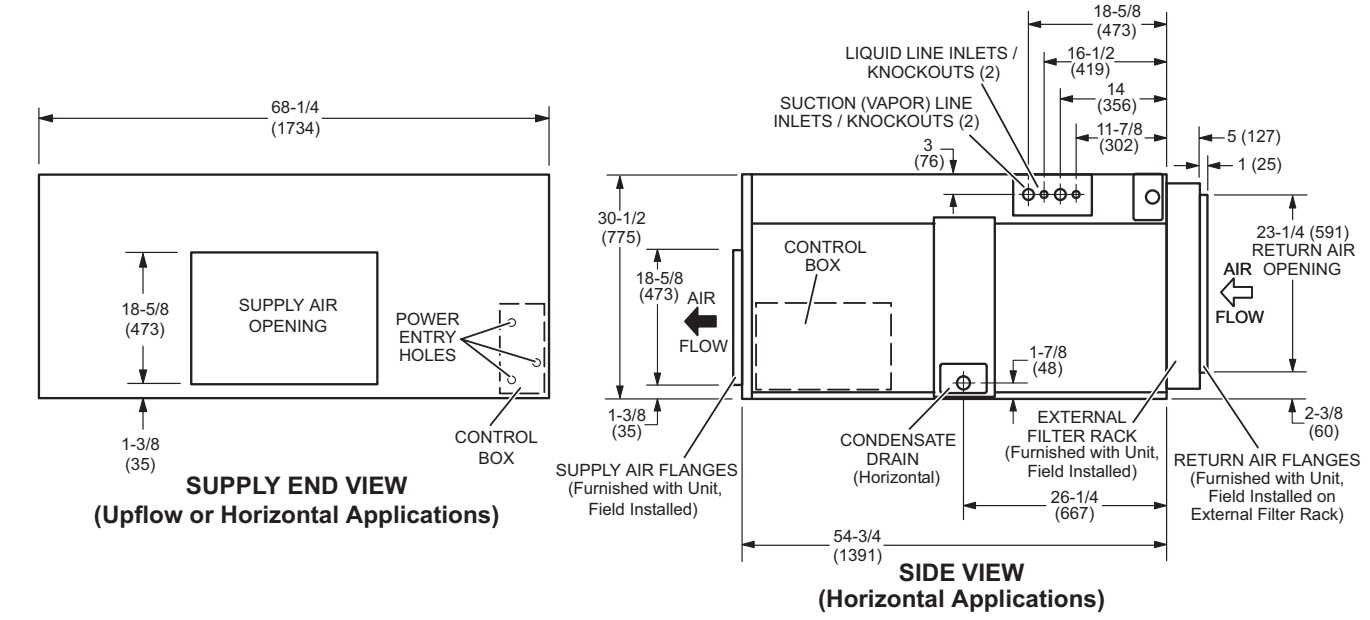
INLET VIEW
(Upflow Applications)

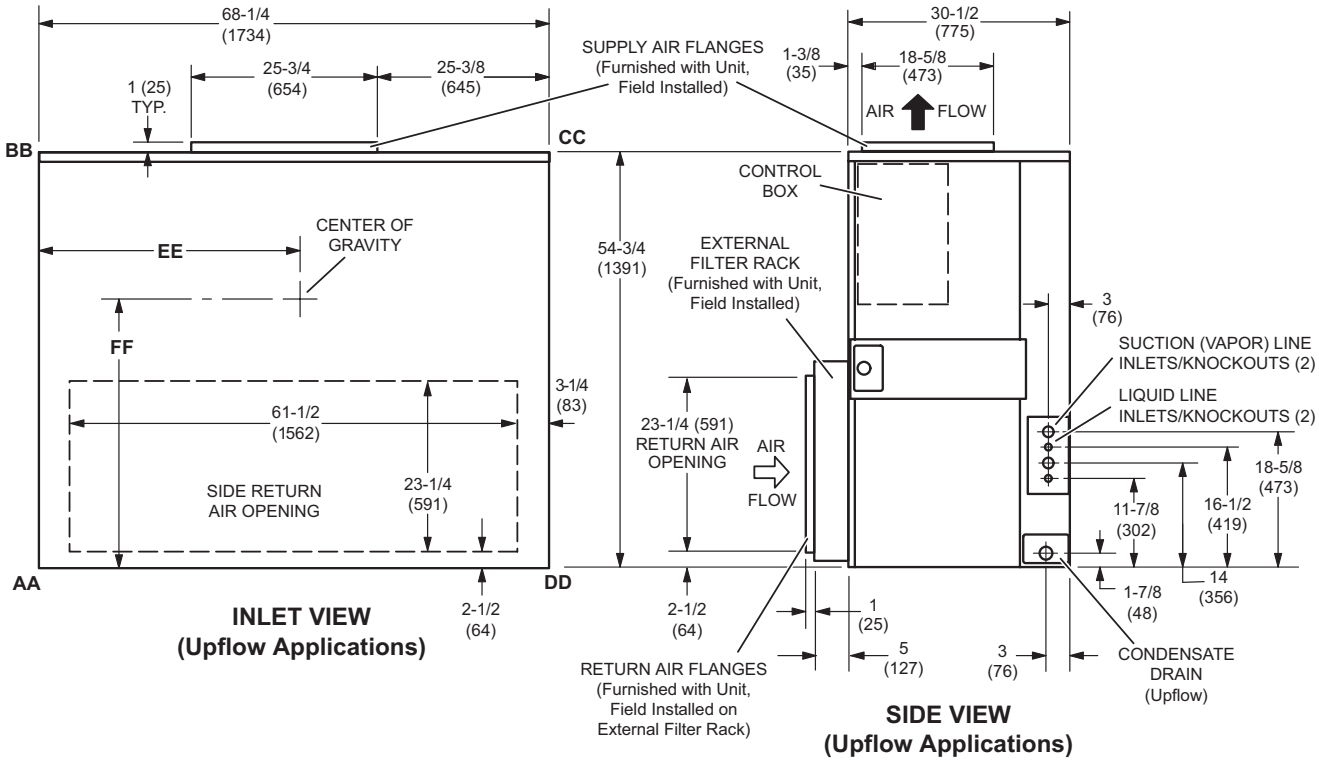


SIDE VIEW
(Upflow Applications)

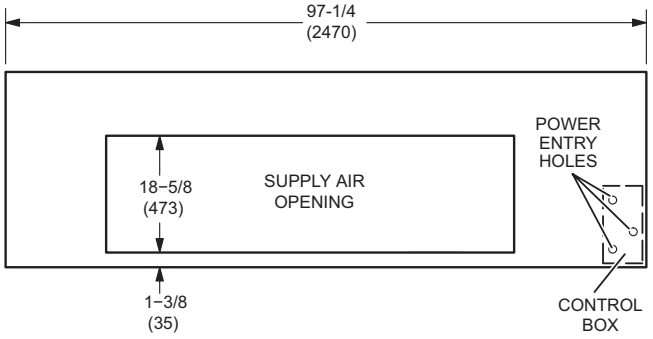
NOTE:
072 models only use one Suction and Liquid Line. Cabinet has knockouts for two. Either opening may be used.

Model	CORNER WEIGHTS								CENTER OF GRAVITY			
	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
EL072KA	102	46	102	46	102	46	102	46	26	660	27.5	699
EL090KA	108	49	108	49	108	49	108	49	26	660	27.5	699

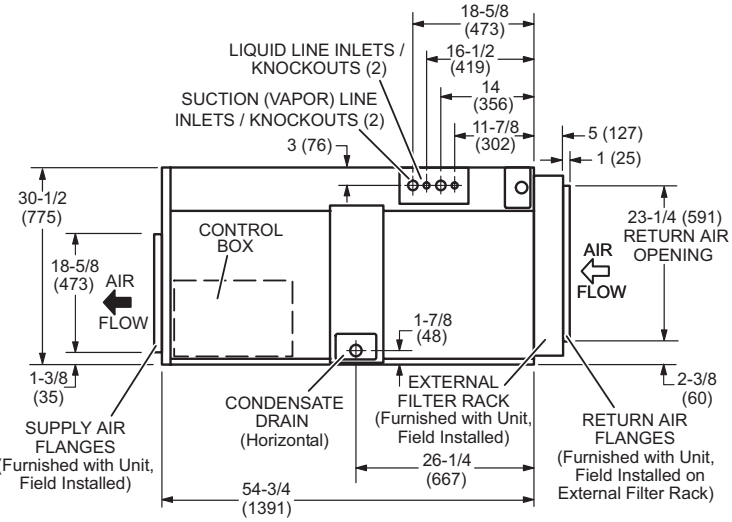




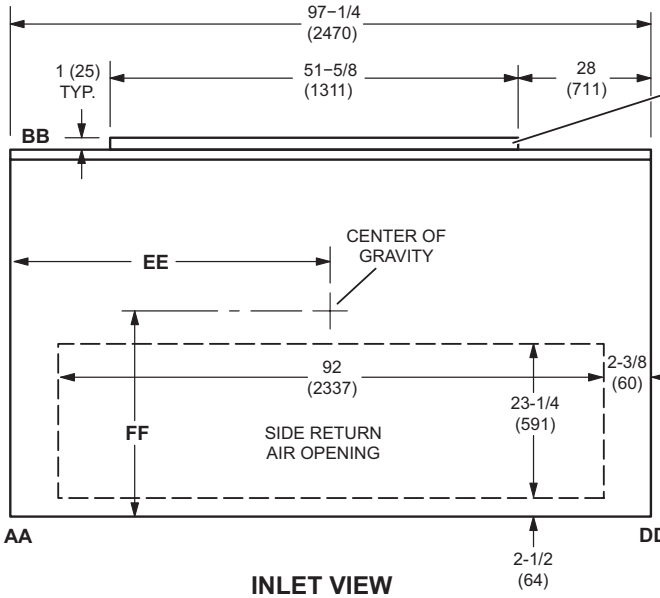
Model	CORNER WEIGHTS								CENTER OF GRAVITY			
	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
EL120KA	126	57	121	55	121	55	126	57	34	864	26	660
EL150KA	130	59	125	57	125	57	130	59	34	864	26	660



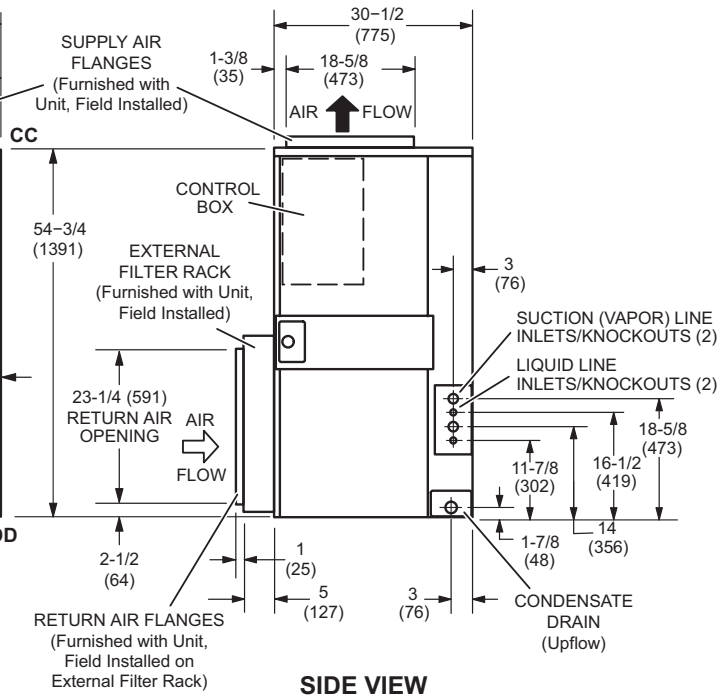
SUPPLY END VIEW



SIDE VIEW
(Horizontal Applications)



INLET VIEW
(Upflow Applications)



SIDE VIEW
(Upflow Applications)

Model	CORNER WEIGHTS								CENTER OF GRAVITY			
	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
EL180KA	176	80	176	80	187	85	187	85	50.5	1283	27.5	699
EL240KA	189	86	189	86	211	96	211	96	52	1321	27.5	699

I - Unit Components

A − Variable Frequency Drive A96

Air handler units are equipped with a VFD which alters the supply power frequency and voltage to the blower motor. Blower speed is staged depending on the compressor stages, heating demand, or ventilation demand. The amount of airflow for each stage is preset from the factory. The VFD is located below the VFD Control Board.

B − Economizer Relay K43

Relay K43 is a double−pole double throw relay used to provide a “G” signal to the LVC2 control in heating demand for blower operation. When there is a call for heating, K43−1 contacts close energizing the LVC2 “G” terminal. See wiring diagram.

C − Blower Motor B3

See page 14 for blower drive specifications and blower motor electrical data.

D − Terminal Block TB14

All field wiring connections to the outdoor unit are made at terminal block TB14.

E-Terminal Block TB13

VFD line voltage connections are made to TB13 located in the control box.

F − Condensate Pan and Over Flow Relay K220 and Switch S149

A reversible drain pan is provided. Never connect condensate drain to a closed system. Condensate drain line must have a trap in the line at the unit exit. K220 and S149 are field installed and used to prevent condensate overflow. In the event of a blocked drain plug and condensate begins rise, N.O. S149 will close energizing relay K220. N.C. K220 opens de−energizing the the unit.G – Freezestats S49, S50

Each unit is equipped with a low temperature switch (freezestat) located on the evaporator coil; S49 (first circuit), S50 (second circuit), on the corresponding evaporator coils.

The freezestats are connected in parallel to each other on one dual-stage compressor unit and in series on two dual-stage compressor units. Each freezestat is a SPST N.C. auto-reset switch which opens at 29°F ± 3°F (-1.7°C ± 1.7°C) on a temperature drop and closes at 58°F ± 4°F (14.4°C ± 2.2°C) on a temperature rise. To prevent coil icing, freezestats open during compressor operation to temporarily disable the respective compressor until the coil warms sufficiently to melt any accumulated frost.

If the freezestats are tripping frequently due to coil icing, check the unit charge, airflow and filters before allowing unit back in operation. Make sure to eliminate conditions which might promote evaporator ice buildup.

H – Inverter Protection Relay K232

Inverter Protection Relay K232 is DPDT with 24V Coil. N.O K232-1 closes to energize inverter A96. If the inverter trips, K232-1 opens to de-energize inverter A96.

I – VFD Control Board A183

VFD control board A183 is a solid-state control board powered with 24VDC from the variable frequency drive A96. A183 gets signals from the thermostat to determine blower speeds For more information on the A183, refer to the MSAV Start Up section. Control A183 is located above the VFD.

All thermostat connections are made at the screw terminal strip on A194 Refrigerant Detection Board (TB1).

J - Refrigerant Detection Board (A194) and Sensor (RT58)

This air handler is equipped with a Refrigerant Leak Detection System. The system consists of the RDS Non-Communicating Blower Control Board (A194) in the control compartment and a R454B Refrigerant Sensor (RT58) near the coil.

K - Speed Switching Relay K264

Relay K264 is a double-pole double throw relay used to signal the VFD drive by switching between Low Speed and Medium Speed. When K264 coil is unenergized (Y1 demand), the K264-1 (normally closed) set of contacts pass LVC2 output “RL” to VFD input “RL”. When K264 coil is energized (Y2 demand), the K264-1 contacts switch passing LVC2 output from “RL” to VFD input “RM”.

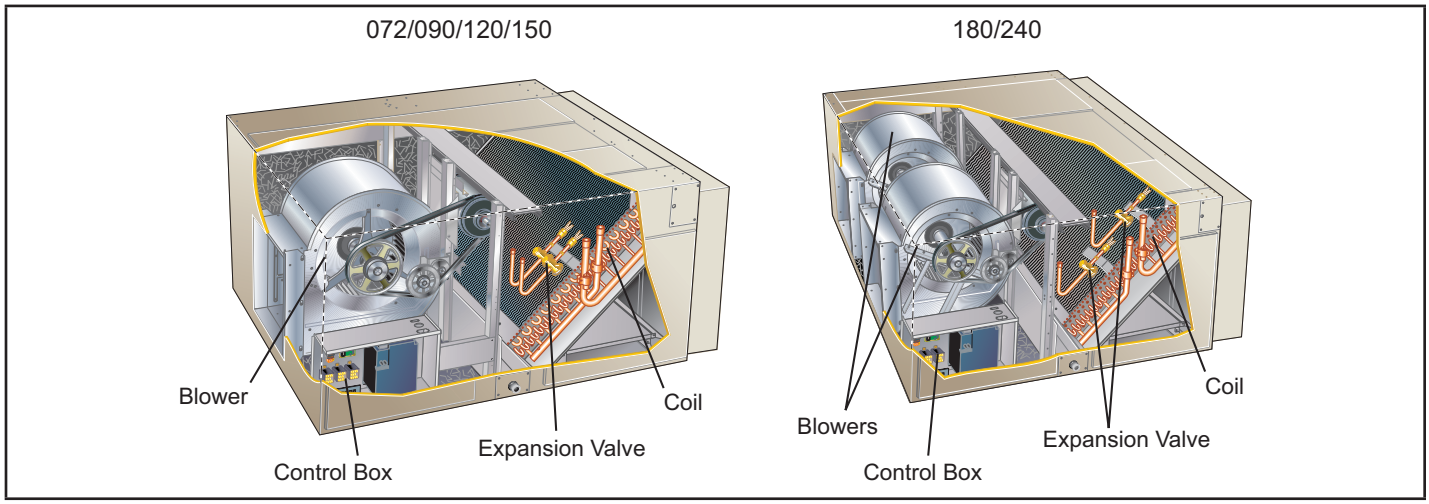


FIGURE 1. Unit Components

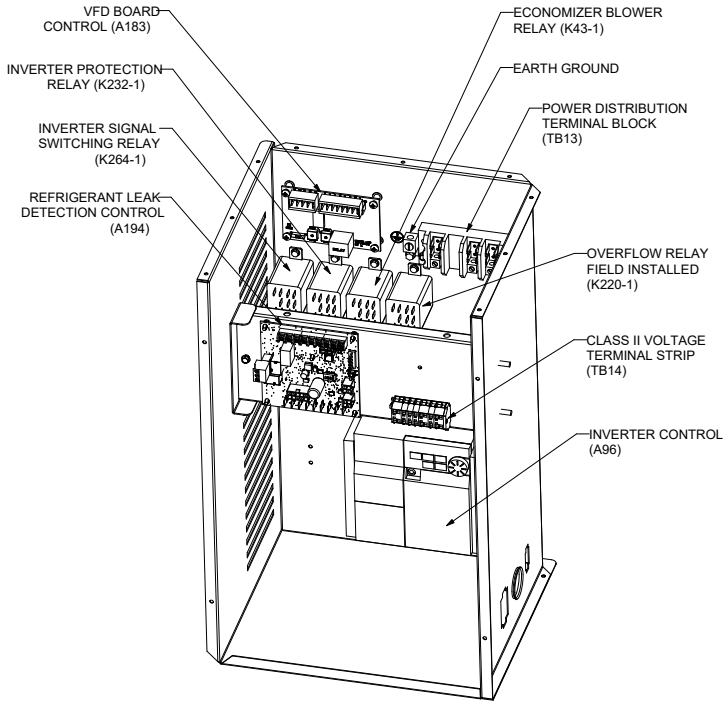


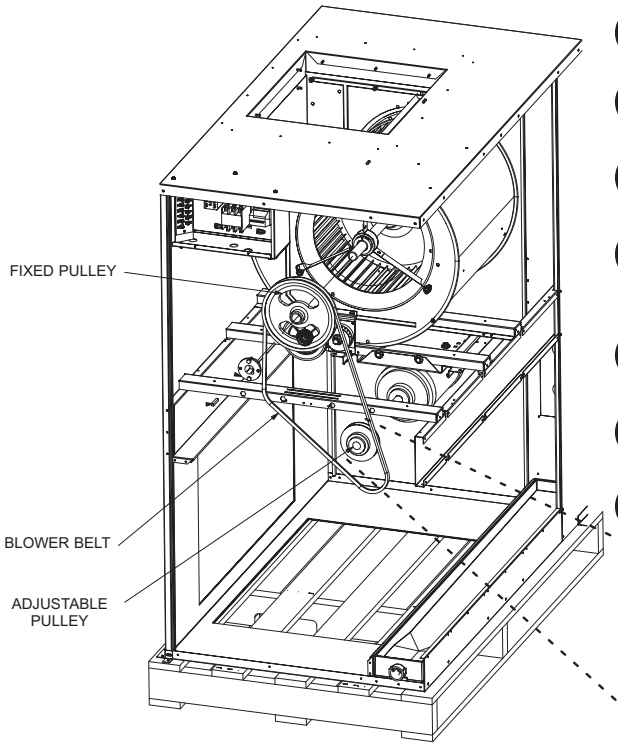
FIGURE 3. Unit Control Box Arrangement

II − Refrigeration System

Units are equipped with single refrigerant circuit (072) or dual refrigerant circuit (090−240). The 090−240 units have a dual distribution system for two stage capacity control during cooling cycles. Each circuit has its own service valve connection and expansion valve.

III − Blower Speed & Belt Tension

Air Volume Adjustment



1. Run the blower without a cooling demand.
2. Measure the static pressure external to the unit.
3. Measure the indoor blower motor's rpm.
4. Use the static pressure and rev/min readings to determine the unit's air volume (see applicable blower performance tables).
5. Loosen the Allen screw on the adjustable pulley.
6. Turn the adjustable sheave clockwise to increase the air volume or counterclockwise to decrease the air volume.
7. Once the desired air volume has been achieved, tighten the Allen screw.

NOTE − The indoor coil must be dry and the air filters must be in place when the following measurements are taken.

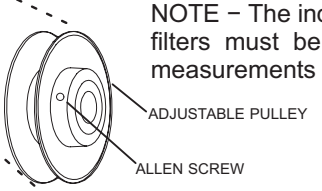


FIGURE 2

Adjusting Belt Tension

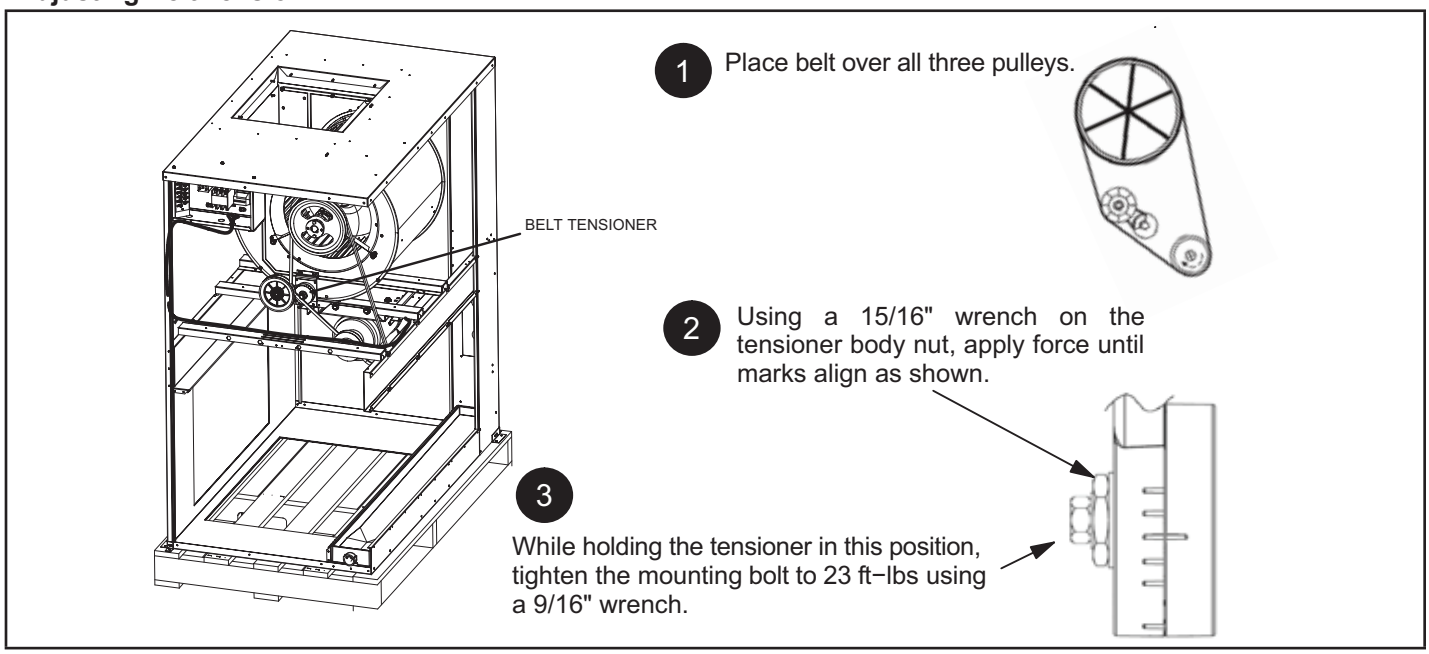


FIGURE 5

IV − Electric Heat Components

See electric heat tables (table of contents) for electric heat matchups. ELEH- units consists of electric heating elements exposed to the air stream. Multiple−stage elements are sequenced on and off by time delays in response to thermostat demand.

1 − Heating Elements HE1, HE2, HE3 and HE4

Heating elements are composed of helix wound bare nichrome exposed directly to the air stream. Heating elements are energized directly by contactors. Once energized, heat transfer is instantaneous. Over temperature protection is provided by primary and secondary high temperature limits. Overcurrent protection is provided by fuses. Each stage of electric heat consists of three elements connected in a three-phase arrangement. Elements in 208/230V units are connected in a “Delta” arrangement. Elements in 460 and 575V units are connected in a “Wye” arrangement except for the 50kW model which is a “Delta” arrangement. Each stage is energized independently by a three-pole double-break contactor and is protected by safety limits. Some models can have up to 8 heat elements, i.e.., HE1 through HE8.

2 − Contactors K15, K16, and K17

Contactors K15, K16, and K17 are three−pole double break relays with a 24 volt coil that energize their respective heating elements on thermostat demand. K15 energizes first stage heat elements and K16 energizes second stage elements in models except 50kW Y-volt. On 50kW Y-volt model, K15 and K16 energizes first stage heat elements and K17 energizes second stage heat elements.

3 − Electric Heat Sequencer Relays K32

Relay K32 is a N.O. sequencer relay with a resistive element for a coil and a bi-metal disk which actuates the contacts. The relays are located on the electric heat vestibule panel and are energized by a 24V heating demand (W1, W2). When energized, the internal resistance heats the bi-metal disk causing the contacts to close. When the relay is de-energized, the disk cools and the contacts open. The relay energizes different stages of heat.

4 − Relays K9 and K19

Relays K9 and K19 are used to electrically isolate the ELKA 24 volts components from the ELEH- 24 volt components. The coil on the relays are connected to first stage and second stage heat. On a first stage heat demand K9 is energized. K9−1 closes energizing first stage heat contactor. On a second stage heat call K19 is energized. When K19−1 closes second stage of heat is energized which energizes relay K32 and second stage contactor depending on heater model used. See wiring diagram.

5 − Fuse F3

Heating elements in all ELEH- units are protected by fuse F3. The fuse is connected in series with each leg of electric heat.

6 − Fuse F4

F4 serves the same purpose as F3 but is in line with line voltage and protects the indoor air handler.

7 − Transformer T2

T2 is line voltage to 24VAC which provides 24VAC to power to all ELEH- contactor coils, relays and timers.

8 − High Temperature Limit S15 (Primary)

S15 is the primary high temperature limit. It is located in the electric heat unit immediately downstream from the heating elements. S15 is a single-pole single-throw normally closed thermostat wired in series with the first stage contactor coil.

When S15 opens, indicating a problem in the system, the contactor(s) are de-energized. When contactor(s) are de-energized, first stage and all subsequent stages of heat are de-energized. Since the indoor air handler is controlled by thermostat demand (K9 remains energized), the indoor air handler continues operating.

9 − High Temperature Limit S20 (Secondary)

Each heating element assembly is electrically connected to two high temperature limits S20 (refer to wiring diagrams in back of this manual). The secondary S20 limit is connected in series with the primary limit S15.

V - Supply Air Inverter Startup

A-General

Units equipped with a supply air inverter are available which provide three blower speeds. The blower will operate at low speed with Y1, medium speed with Y2, and high speed with Y3. This results in lower energy consumption.

Inverter-driven blowers will operate at high speed during ventilation (blower “G” only signal) but can be adjusted to operate at low speed.

Low speed is approximately 2/3 of the full speed RPM. Medium speed is approximately 3/4 of the full speed.

B-Set Maximum Blower CFM

1 - Initiate a blower (G) only signal from the room thermostat or control system.

2 - Adjust the blower pulley to deliver the full (high speed) CFM in the typical manner. See *Determining Unit CFM* in the Blower Operation and Adjustment section.

C-Set Blower Speed During Ventilation

To save energy during ventilation, the blower speed can be set to low. This is accomplished by changing the ventilation speed switch on the VFD control board to “LO”. See figure 5.

NOTE *– On units equipped with an economizer, set damper minimum position as shown in the next section. After adjusting the low speed minimum position, the ventilation speed switch will be in the “LO” position.*

D-Set Damper Minimum Position (Units with Economizer)

To maintain required minimum ventilation air volumes when the unit is in the occupied mode, two minimum damper positions must be set. A high and a low speed potentiometer are provided on the VFD control board to adjust minimum damper position. See FIGURE 4.

Set High Speed Minimum Position

1 - Initiate a blower (G) only AND occupied demand from the room thermostat or control system.

2 - Set the ventilation speed switch on the VFD control board to “HI”.

3 - Rotate the high speed potentiometer on the VFD control board to set the high speed minimum damper position.

4 - Measure the intake air CFM. If the CFM is lower than the design specified CFM for ventilation air, use the potentiometer to increase the damper percent open. If the CFM is higher than specified, decrease the damper percent open.

NOTE *– Intake air CFM can also be determined using the outdoor air temperature, return air temperature and mixed air temperature. Refer to the economizer or outdoor air damper installation instructions.***Set Low Speed Minimum Position**

1 - Initiate a blower (G) only AND occupied demand from the room thermostat or control system.

2 - Set the ventilation speed switch on the VFD control board to “LO”.

3 - Rotate the low speed potentiometer on the VFD control board to set the low speed minimum damper position.

4 - Measure the intake air CFM. If the CFM is lower than the design specified CFM for ventilation air, use the potentiometer to increase the damper percent open. If the CFM is higher than specified, decrease the damper percent open.

NOTE *– Intake air CFM can also be determined using the outdoor air temperature, return air temperature and mixed air temperature. Refer to the economizer or outdoor air damper installation instructions*.

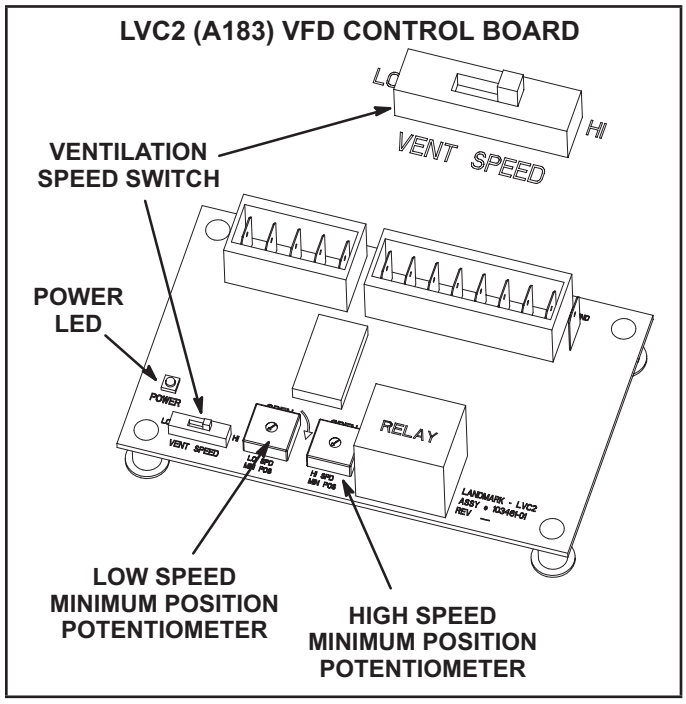


FIGURE 4

Troubleshoot LVC2 Board (A183)

Refer to wiring diagram sections B (unit), C (control) and D (economizer) located on inside of unit panels.

1 - Inspect the LVC2 for damaged components. Replace the LVC2 if damaged components are found.

2 - Check all wire connections to LVC2; secure if loose.

3 - Check for 24VAC signal at the thermostat blower input (G to GND terminal). See FIGURE 6.

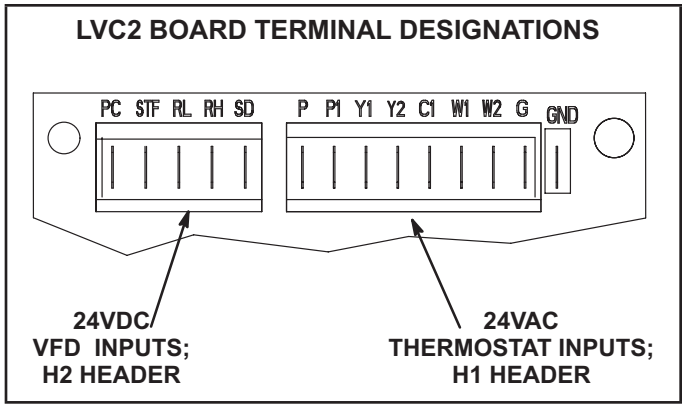


FIGURE 6

6 - If there is no thermostat signal, troubleshoot back toward the thermostat.

7 - Check the power LED on the board. See FIGURE 4.

8 - If the power LED is not on, check voltage between LVC2 terminals PC (H2-1) and SD (H2-5). Voltage should read 24VDC.

9 - If voltage does not read 24VDC, disconnect the H2 header from the LVC2 VFD inputs terminal block (to make sure the LVC2 is not shorting 24VDC supply from the inverter). Measure the voltage between the end terminals on the H2 header. If 24VDC is present, replace the LVC2 board. If no voltage is read, troubleshoot the VFD.

10 - When LVC2 24VAC thermostat blower (G) input and 24VDC power are present, check the LVC2 low and high speed outputs. The LVC2 uses inverse logic to enable the blower; 1VDC will be read at the enabled blower speed terminal. See table 3.

11 - If all inputs are correct and the unit still does not operate as intended, replace LVC2 board.

TABLE 1
LVC2 BOARD BLOWER OUTPUTS

Output Terminals	Voltage	Blower Operation
RL-SD	1VDC	Low Speed
RH-SD	24VDC	
RL-SD	24VDC	High Speed
RH-SD	1VDC	
RL-SD	1VDC	Illegal State (replace board)
RH-SD	1VDC	
RL-SD	24VDC	Blower Off (replace board)
RH-SD	24VDC	

VI - Verify Proper Operation

If the blower is not rotating in the proper direction:

1 - Disconnect all power to the unit and open the compressor / controls compartment access panel.

2 - Reverse any two power wires going from the VFD to the blower motor.

3 - Check all wiring to the VFD. No wires should be connected to TB2-STR.

4 - Check to ensure that wiring connections are secure.

5 - Close access panel and restore power to unit.

Verify proper operation of VFD:

Refer to supply air inverter start-up instructions above.

NOTE *– Operate unit in the heating mode or mode which operates at the highest blower speed. Measure amp draw to blower motor between the VFD and blower motor. Verify that the amperage does not exceed the FLA value listed on the motor nameplate.*

VII - Refrigerant Leak Detection System

This air handler is equipped with a Refrigerant Leak Detection System. The system consists of the RDS Non-Communicating Blower Control Board (RDSC) in the control compartment and a R454B Refrigerant Sensor near the coil. The Modes of Operation for the RDS Non-Communicating Blower Control Board are Initializing, Normal, Leak Detected, and Fault.

MODES OF OPERATION

Initializing

The RDS Non-Communicating Blower Control Board is establishing connection with the refrigerant detection sensor and sensor is “warming up”.

Normal

The HVAC system is functioning normally, i.e., responding to thermostat demand signals. The RDS Non-Communicating Blower Control Board has not detected a refrigerant leak.

Leak Detected (Mitigation)

When the RDS Non-Communicating Blower Control Board detects a refrigerant leak:

1 - The RDS Non-Communicating Blower Control Board shuts off the (R) output (24VAC power) to the thermostat, which de-energizes the outdoor unit compressor and heat sources, such as gas and/or electric strip heat. No heating or cooling demands will be met.

2 - The RDS Non-Communicating Blower Control Board activates the blower ventilation speed (G). The blower purges refrigerant from the cabinet, plenum, and ductwork.

***NOTE** – The blower ventilation (G) speed is determined by SW1 position on LVC2 (A183) control board (refer to the Supply Air Inverter Startup Section).*

3 - After the RDS Non-Communicating Blower Control Board determines the refrigerant levels are below the safety threshold, the blower will continue to function for an additional seven (7) minutes.

4 - After the blower sequence is complete, the HVAC system resumes normal operation.

***NOTE** – The HVAC system may not maintain a cooling or heating setpoint if a significant leak exists. Any refrigerant leaks that remain unaddressed for an extended time may cause the HVAC system to shut down on a low refrigerant pressure limit condition.*

Fault/Service

When a fault is detected within the RDS Non-Communicating Blower Control Board, the indoor unit blower engages and remains engaged at a constant output until the fault is cleared.

DIAGNOSTIC CODES / TROUBLESHOOTING

The RDS Non-Communicating Blower Control Board is equipped with a multicolor LED. The LED signals the operational state of the RDS Non-Communicating Blower Control Board. To review the operational states, refer to table 3, LED Operational Modes / Troubleshooting, for details. Red diagnostic codes indicate a specific RDS Non-Communicating Blower Control Board issue. To determine the issue and possible troubleshooting actions, refer to table 4, Red LED Diagnostic Codes / Troubleshooting.

The RDS Non-Communicating Blower Control Board is equipped with a Test/Reset button. The Test button can be used to complete several functions, depending on the mode of operation of the RDS Non-Communicating Blower Control Board. Table 5 lists the functions of the Test button during each mode of operation.

TABLE 2. LED Operational Modes / Troubleshooting

Operating Mode	LED Status	Action
Initializing	Flashing green	None
Monitoring	Solid green*	None
Mitigation (Leak Detected)	Flashing blue	Check coil tubes for leak. Repair the issue and restart the equipment.
Fault / Service	Solid blue, iterrupted by red flash code	Refer to table for troubleshooting guidance.

*Solid green interrupted by a blue flash indicates the mitigation process has previously occured.

TABLE 3. Red LED Diagnostic Codes / Troubleshooting

Red Wink	Applies to Individual Sensor(s)	Issue	Action
1	Yes	RDS Sensor Fault	Replace sensor
2	No	VFD alarm / Drain pan overflow	Check VFD for alarms, remedy alarms present. If float switch is installed, verify proper switch mounting location, depth in pan, unobstructed condensate drain line; correct as needed.
3	Yes	Incompatible sensor installed	Replace sensor
4	Yes	Sensor communication issue	Check sensor connection. Ensure connection is clean and tight.
5	No	R-input not available	Check for 24VAC power connected to thermostat R terminal on the RDSC. 24VAC power should only be provided at A194-R quick connection for the RDSC to function.
6	No	Invalid configuration of sensor count	Not applicable

TABLE 4. Test Button Functions

Operation Mode	Press the Test Button to...	Press	Action
Monitoring	Trigger a leak detection response. Verify all equipment is wired correctly into the RDSC (after installation).	Short	Clear purge-counter if prior mitigation has occured; test mitigation
		Long	Reset control
Mitigating (Leak Detected)	Reset the RDSC to a normal mode of operation after a previous leak has been detected and purged from the HVAC system.	Short	If testing mitigation, end test
Fault/Service	Reset the RDSC after troubleshooting and resolving a fault condition. If the fault is not resolved, the RDSC will enter the Fault mode again.	Short	Reevaluate fault condition - if cleared, return to monitoring, otherwise update indicator.
		Long	Reset control

VIII - Normal System Operation

When the RDS Non-Communicating Blower control is in Monitoring Mode, the indoor unit and outdoor unit cycle on demand from the room thermostat. Refer to interconnect diagrams (FIGURE 7 and FIGURE 8) for demand signals passed from the indoor unit to the outdoor unit.

For details on the indoor unit component operation based on thermostat demand and the outdoor unit type, see appropriate table:

1. Single-Compressor Cooling Matchups (up to 2 COOL and 2 HEAT) - TABLE 5 and TABLE 6.
2. Two-Compressor Matchups (up to 3 COOL and 2 HEAT) - TABLE 7, TABLE 8, and TABLE 9.

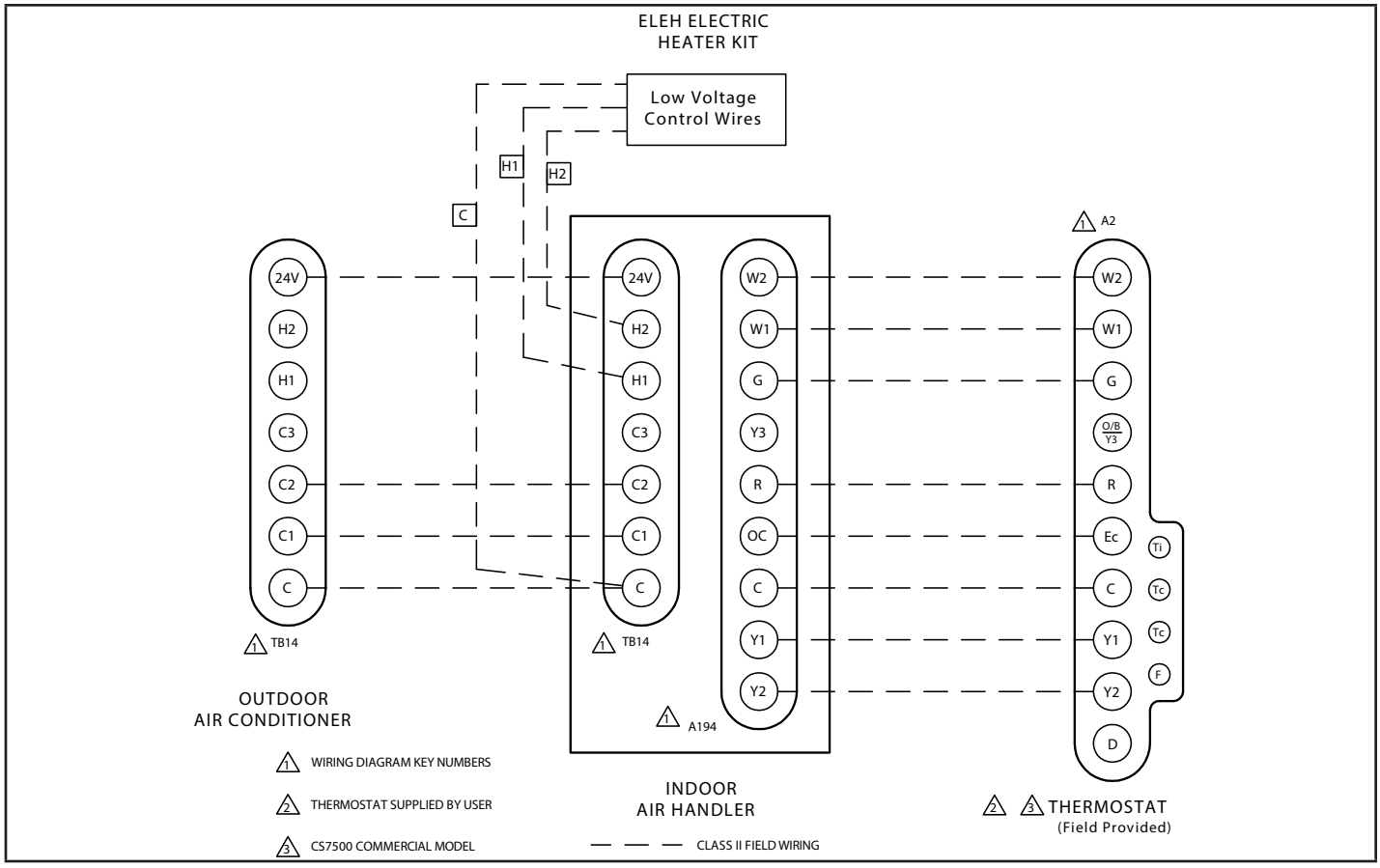


FIGURE 7. Typical Field Wiring – Single Compressor

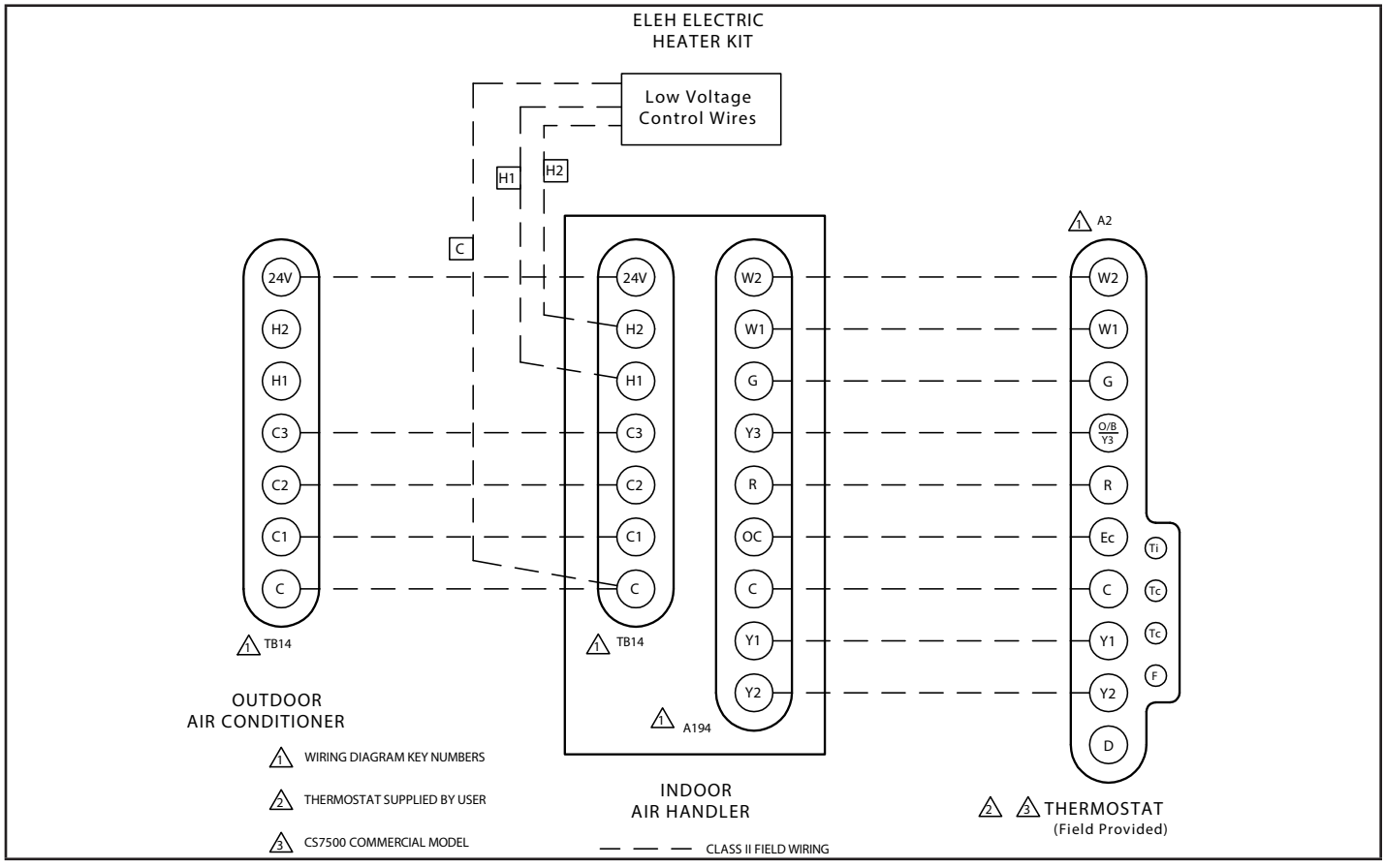


FIGURE 8. Typical Field Wiring – Two Compressors

Single-Compressor Cooling Matchups (up to 2 COOL and 2 HEAT)

TABLE 5. EL072KA-EL072KCSS; EL090KA-EL090KCSS

Demands	Condition	Unit Operation											
T'stat, DDC[4]	Outdoor Air Suitability[3]	Outputs to EL_XC	Indoor Unit Blower Speeds (B3)			Outdoor Unit Compressor		Outdoor Unit Fans				Damper (Economizer)	
(TB1)		*(TB1)*	*LOW*	*MED*	*HIGH*	*(B1)*	*(B2)*	*(B4)*	*(B5)*	*(B21)*	*(B22)*	*OCC*	*UNOCC*
G	- - - -	- - - -	X[1]	- - - -	X[1]	OFF	- - - -	OFF	- - - -	- - - -	- - - -	VENT[1]	CLOSED
Y1	NO	C1	X	- - - -	- - - -	**LOW**	- - - -	**ON**	- - - -	- - - -	- - - -	MIN LO	CLOSED
Y1+Y2	NO	C1+C2	- - - -	- - - -	- - - -	**HIGH**	- - - -	**ON**	- - - -	- - - -	- - - -	MIN LO	CLOSED
W1 or W2	- - - -	- - - -	- - - -	- - - -	X	OFF	- - - -	OFF	- - - -	- - - -	- - - -	MIN HI	CLOSED
Y1	YES	- - - -	- - - -	- - - -	X	OFF	- - - -	OFF	- - - -	- - - -	- - - -	MOD[2]	MOD[2]
Y1+Y2	YES	C1	- - - -	- - - -	X	**LOW**	- - - -	**ON**	- - - -	- - - -	- - - -	MOD[2]	MOD[2]

Footnotes:

[1]VENT = Ventilation speed and damper position selectable using LVC2 control board, Switch SW1.

[2]MOD = Damper Modulating

[3]Suitability for Free Cooling with Damper Installed

[4]Field installed jumper wire required between TB1-C2 and TB1-C3

<- Unit Operation without Damper installed

TABLE 6 EL120KA-EL120KCSS

Demands	Condition	Unit Operation											
T'stat, DDC[4]	Outdoor Air Suitability[3]	Outputs to EL_XC	Indoor Unit Blower Speeds (B3)			Outdoor Unit Compressor		Outdoor Unit Fans				Damper (Economizer)	
(TB1)		*(TB1)*	*LOW*	*MED*	*HIGH*	*(B1)*	*(B2)*	*(B4)*	*(B5)*	*(B21)*	*(B22)*	*OCC*	*UNOCC*
G	- - - -	- - - -	X[1]	- - - -	X[1]	OFF	- - - -	OFF	OFF	- - - -	- - - -	VENT[1]	CLOSED
Y1	NO	C1	X	- - - -	- - - -	**LOW**	- - - -	**ON**	**ON**	- - - -	- - - -	MIN LO	CLOSED
Y1+Y2	NO	C1+C2	- - - -	- - - -	X	**HIGH**	- - - -	**ON**	**ON**	- - - -	- - - -	MIN LO	CLOSED
W1 or W2	- - - -	- - - -	- - - -	- - - -	X	OFF	- - - -	OFF	OFF	- - - -	- - - -	MIN HI	CLOSED
Y1	YES	- - - -	- - - -	- - - -	X	OFF	- - - -	OFF	OFF	- - - -	- - - -	MOD[2]	MOD[2]
Y1+Y2	YES	C1	- - - -	- - - -	X	**LOW**	- - - -	**ON**	**ON**	- - - -	- - - -	MOD[2]	MOD[2]

Footnotes:

[1]VENT = Ventilation speed and damper position selectable using LVC2 control board, Switch SW1.

[2]MOD = Damper Modulating

[3]Suitability for Free Cooling with Damper Installed

[4]Field installed jumper wire required between TB1-C2 and TB1-C3

<- Unit Operation without Damper installed

Two-Compressor Matchups (up to 3 COOL and 2 HEAT)

TABLE 7. EL120KA-EL120KCSD

Demands	Condition	Unit Operation											
T'stat, DDC	Outdoor Air Suitability[3]	Outputs to EL_XC	Indoor Unit Blower Speeds (B3)			Outdoor Unit Compressor		Outdoor Unit Fans				Damper (Economizer)	
(TB1)		*(TB1)*	*LOW*	*MED*	*HIGH*	*(B1)*	*(B2)*	*(B4)*	*(B5)*	*(B21)*	*(B22)*	*OCC*	*UNOCC*
G	- - - -	- - - -	X[1]	- - - -	X[1]	OFF	OFF	OFF	OFF	- - - -	- - - -	VENT[1]	CLOSED
Y1	NO	C1	X	- - - -	- - - -	**LOW**	OFF	**ON**	**ON**	- - - -	- - - -	MIN LO	CLOSED
Y1+Y2	NO	C1+C2	- - - -	X	- - - -	**LOW**	**LOW**	**ON**	**ON**	- - - -	- - - -	MIN LO	CLOSED
Y1+Y2+Y3	NO	C1+C2+C3	- - - -	- - - -	X	**HIGH**	**HIGH**	**ON**	**ON**	- - - -	- - - -	MIN HI	CLOSED
W1 or W2	- - - -	- - - -	- - - -	- - - -	X	OFF	OFF	OFF	OFF	- - - -	- - - -	MIN HI	CLOSED
Y1	YES	- - - -	- - - -	- - - -	X	OFF	OFF	OFF	OFF	- - - -	- - - -	MOD[2]	MOD[2]
Y1+Y2	YES	C1	- - - -	X	- - - -	**LOW**	OFF	**ON**	**ON**	- - - -	- - - -	MOD[2]	MOD[2]
Y1+Y2+Y3	YES	C1+C3	- - - -	- - - -	X	**HIGH**	OFF	**ON**	**ON**	- - - -	- - - -	MOD[2]	MOD[2]

Footnotes:

[1]VENT = Ventilation speed and damper position selectable using LVC2 control board, Switch SW1.

[2]MOD = Damper Modulating

[3]Suitability for Free Cooling with Damper Installed

<- Unit Performance without Damper installed

TABLE 8. EL150KA-EL150KCSD

Demands	Condition	Unit Operation											
T'stat, DDC	Outdoor Air Suitability[3]	Outputs to EL_XC	Indoor Unit Blower Speeds (B3)			Outdoor Unit Compressor		Outdoor Unit Fans				Damper (Economizer)	
(TB1)		*(TB1)*	*LOW*	*MED*	*HIGH*	*(B1)*	*(B2)*	*(B4)*	*(B5)*	*(B21)*	*(B22)*	*OCC*	*UNOCC*
G	- - - -	- - - -	X[1]	- - - -	X[1]	OFF	OFF	OFF	OFF	- - - -	- - - -	VENT[1]	CLOSED
Y1	NO	C1	X	- - - -	- - - -	**LOW**	OFF	**ON**	OFF	- - - -	- - - -	MIN LO	CLOSED
Y1+Y2	NO	C1+C2	- - - -	X	- - - -	**LOW**	**LOW**	**ON**	**ON**	- - - -	- - - -	MIN LO	CLOSED
Y1+Y2+Y3	NO	C1+C2+C3	- - - -	- - - -	X	**HIGH**	**HIGH**	**ON**	**ON**	- - - -	- - - -	MIN HI	CLOSED
W1 or W2	- - - -	- - - -	- - - -	- - - -	X	OFF	OFF	OFF	OFF	- - - -	- - - -	MIN HI	CLOSED
Y1	YES	- - - -	- - - -	- - - -	X	OFF	OFF	OFF	OFF	- - - -	- - - -	MOD[2]	MOD[2]
Y1+Y2	YES	C1	- - - -	X	- - - -	**LOW**	OFF	**ON**	OFF	- - - -	- - - -	MOD[2]	MOD[2]
Y1+Y2+Y3	YES	C1+C3	- - - -	- - - -	X	**HIGH**	OFF	**ON**	OFF	- - - -	- - - -	MOD[2]	MOD[2]

Footnotes:

[1]VENT = Ventilation speed and damper position selectable using LVC2 control board, Switch SW1.

[2]MOD = Damper Modulating

[3]Suitability for Free Cooling with Damper Installed

- - - - <- Unit Operation without Damper installed

TABLE 9. EL180KA-EL180KCSD; EL240KA-EL240KCSD

Demands	Condition	Unit Operation											
T'stat, DDC	Outdoor Air Suitability[3]	Outputs to EL_XC	Indoor Unit Blower Speeds (B3)			Outdoor Unit Compressor		Outdoor Unit Fans				Damper (Economizer)	
(TB1)		*(TB1)*	*LOW*	*MED*	*HIGH*	*(B1)*	*(B2)*	*(B4)*	*(B5)*	*(B21)*	*(B22)*	*OCC*	*UNOCC*
G	- - - -	- - - -	X[1]	- - - -	X[1]	OFF	OFF	OFF	OFF	OFF	OFF	VENT[1]	CLOSED
Y1	NO	C1	X	- - - -	- - - -	**LOW**	OFF	**ON**	**ON**	OFF	OFF	MIN LO	CLOSED
Y1+Y2	NO	C1+C2	- - - -	X	- - - -	**LOW**	**LOW**	**ON**	**ON**	**ON**	**ON**	MIN LO	CLOSED
Y1+Y2+Y3	NO	C1+C2+C3	- - - -	- - - -	X	**HIGH**	**HIGH**	**ON**	**ON**	**ON**	**ON**	MIN HI	CLOSED
W1 or W2	- - - -	- - - -	- - - -	- - - -	X	OFF	OFF	OFF	OFF	OFF	OFF	MIN HI	CLOSED
Y1	YES	- - - -	- - - -	- - - -	X	OFF	OFF	OFF	OFF	OFF	OFF	MOD[2]	MOD[2]
Y1+Y2	YES	C1	- - - -	X	- - - -	**LOW**	OFF	**ON**	**ON**	OFF	OFF	MOD[2]	MOD[2]
Y1+Y2+Y3	YES	C1+C3	- - - -	- - - -	X	**HIGH**	OFF	**ON**	**ON**	OFF	OFF	MOD[2]	MOD[2]

Footnotes:

[1]VENT = Ventilation speed and damper position selectable using LVC2 control board, Switch SW1.

[2]MOD = Damper Modulating

[3]Suitability for Free Cooling with Damper Installed

- - - - <- Unit Operation without Damper installed

IX - Wiring Diagrams And Sequence Of Operation

EL072/240KA − BLOWER COOLING SEQUENCE OF OPERATION (refer to FIGURE 9) – ALL (NO ECONOMIZER)

NOTE *– An A96 alarm condition will de-energize K232 inverter protection relay, opening K232-2 contacts shutting off thermostat power.*

First Stage Cooling Call

Y1 cooling demand energizes both C1 and Y1 inputs to A183 control board.

A183 sends RL signal to A96 RL through K264-1 N.C. contacts starting forward motion of blower B3 in low speed.

Second Stage Cooling Call

Y2 cooling demand energizes K264 inverter speed switching relay.

K264-1 opens switching the A183 RL signal to A96 RM changing the forward motion of the blower to medium speed.

Third Stage Cooling Call

Y3 cooling demand energizes Y2 input to A183 control board.

A183 sends RH signal to A96 RH changing the forward motion of the blower to high speed.

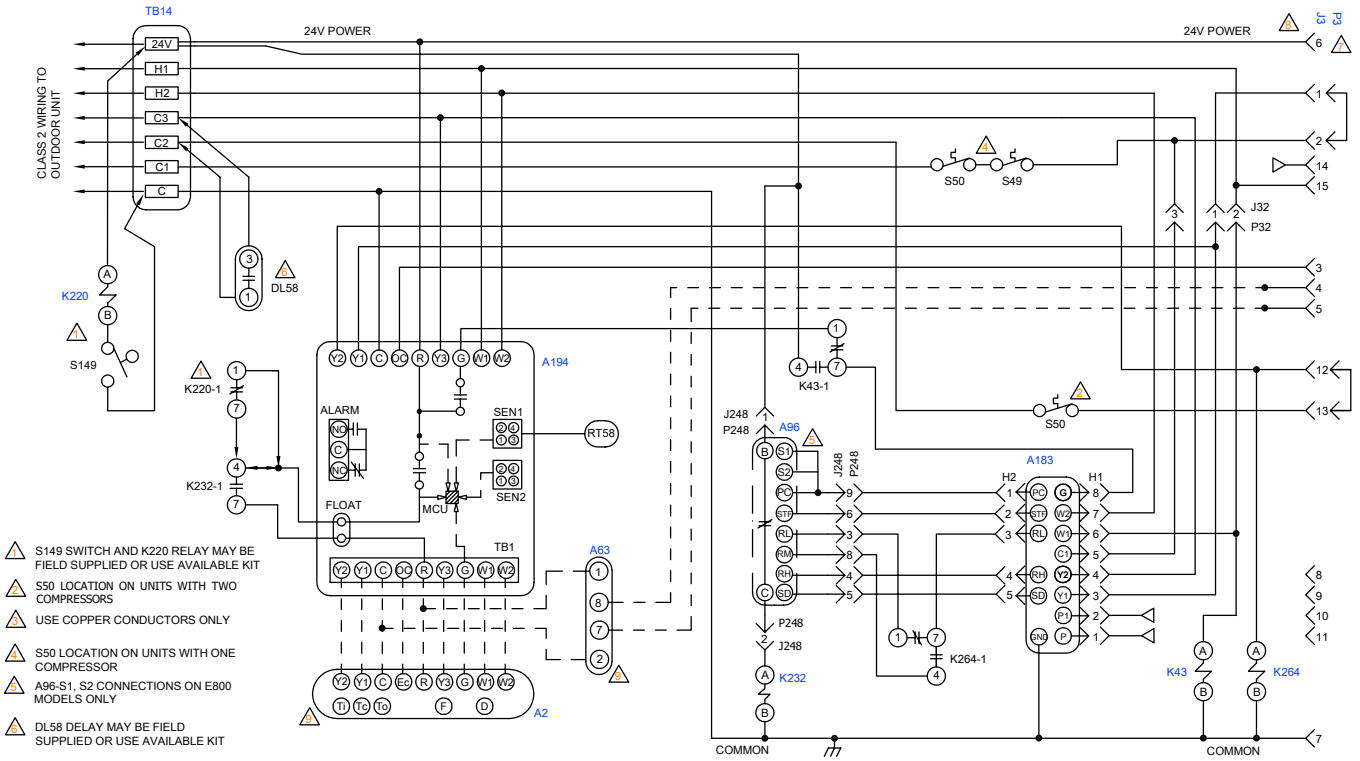
EL072/240XA − BLOWER HEATING SEQUENCE OF OPERATION (refer to FIGURE 9) – ALL

W1 heat demand energizes both K43 economizer relay and W1 input to A183 control board.

When K43−1 closes, the G input to A183 control board is energized.

A183 sends RH signal to A96 starting forward motion of blower B3 in high speed.

NOTE *– An A96 alarm condition will de-energize K232 inverter protection relay, opening K232-2 contacts shutting off thermostat power*.



KEY	COMPONENT
A2	THERMOSTAT, CS7500 SERIES
A63	SENSOR, CO2
A96	CONTROL, INVERTER
A183	CONTROL, VFD BOARD
A194	CONTROL, REFRIGERANT LEAK DET.
B3	MOTOR-BLOWER
DL58	DELAY, ADJUSTABLE, ON MAKE
K43,-1	RELAY-ECONOMIZER BLOWER
K220,-1	RELAY-OVERFLOW
K232,-1	RELAY-INVERTER PROTECTION
K264,-1	RELAY-A96 SIGNAL SWITCHING
J/P3	JACK/PLUG ECONOMIZER

KEY	COMPONENT
J/P32	JACK/PLUG ECONOMIZER ADAPTER
J/P246	JACK/PLUG POWER TO VFD
J/P247	JACK/PLUG VFD TO MTR
J/P248	JACK/PLUG VFD CONTROL
RT58	SENSOR-REFRIG. LEAK DETECTION 1
S49	SWITCH-FREEZESTAT COMPRESSOR 1
S50	SWITCH-FREEZESTAT COMPRESSOR 2
S149	SWITCH-OVERFLOW
TB1	TERMINAL STRIP, CLASS II VOLTAGE
TB13	TERMINAL BLOCK, POWER DISTRIBUTOR
TB14	TERMINAL STRIP, CLASS II VOLTAGE

2024/07	WIRING DIAGRAM 538449-01	07/24
BLOWER		
ELITE AIR HANDLERS 072-240 - Y,G,J		
SECTION B		REV. 0
Supersedes	New Form No. 538449-01	

FIGURE 9

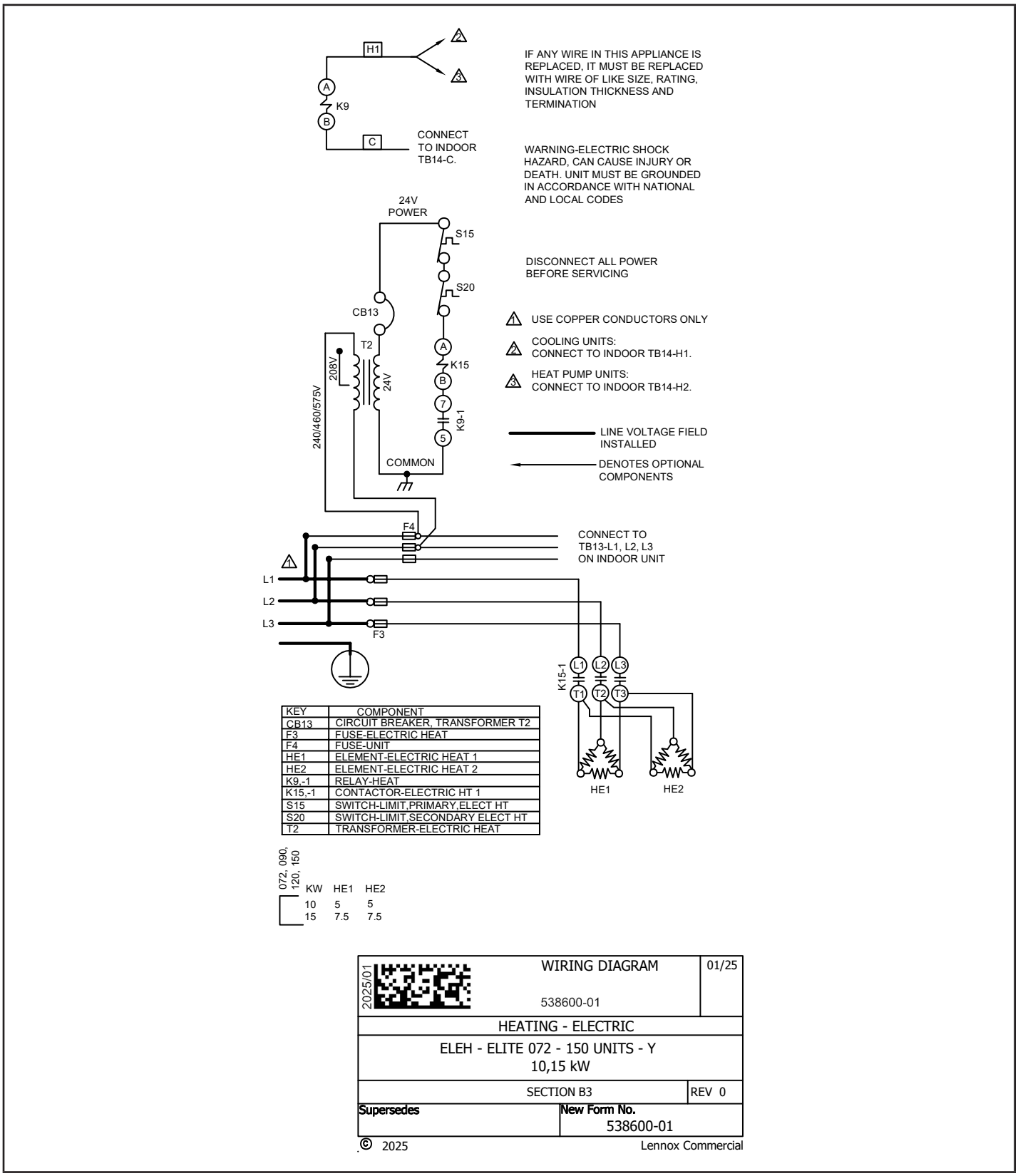
ELEH ELECTRIC HEAT SEQUENCE OF OPERATION (refer to FIGURE 10) - 1 STAGE HEAT

W1 heat demand (W2 for Heat Pumps) energizes the K9 heat relay.

K9−1 closes energizing K15 contactor.

K15−1 closes energizing heating elements HE1 and HE2 assuming primary limit S15 and secondary limit S20 are closed.

NOTE *– For Heat Pumps, W1 heat demand operates the heat pump in heating mode.*



KEY	COMPONENT
CB13	CIRCUIT BREAKER, TRANSFORMER T2
F3	FUSE-ELECTRIC HEAT
F4	FUSE-UNIT
HE1	ELEMENT-ELECTRIC HEAT 1
HE2	ELEMENT-ELECTRIC HEAT 2
K9,-1	RELAY-HEAT
K15,-1	CONTACTOR-ELECTRIC HT 1
S15	SWITCH-LIMIT,PRIMARY,ELECT HT
S20	SWITCH-LIMIT,SECONDARY ELECT HT
T2	TRANSFORMER-ELECTRIC HEAT

FIGURE 10

ELEH ELECTRIC HEAT SEQUENCE OF OPERATION (refer to FIGURE 11) – 2 STAGE HEAT

First Stage Heat Call

Heat Pumps (ELKP) - W1 heat demand operates the heat pump in heating mode.

Air Conditioners (ELKC) - W1 heat demand energizes the K9 heat relay.

K9−1 closes energizing K15 contactor.

K15−1 closes energizing heating elements HE1 and HE2 assuming primary limit S15 and secondary limit S20 are closed.

Second Stage Heat Call

Air Conditioners (ELKC) − W2 heat demand energizes K19 contactor.

K19−1 closes, energizing one side of contactor K16 which energizes one side of K32 relay.

K32−1 closes energizing K16 contactor.

K16−1 closes, energizing heating elements HE3 and HE4 assuming primary limit S15 and secondary limit S20 are closed.

Heat Pumps (ELKP) – W2 heat demand energizes K9 and K19 relays.

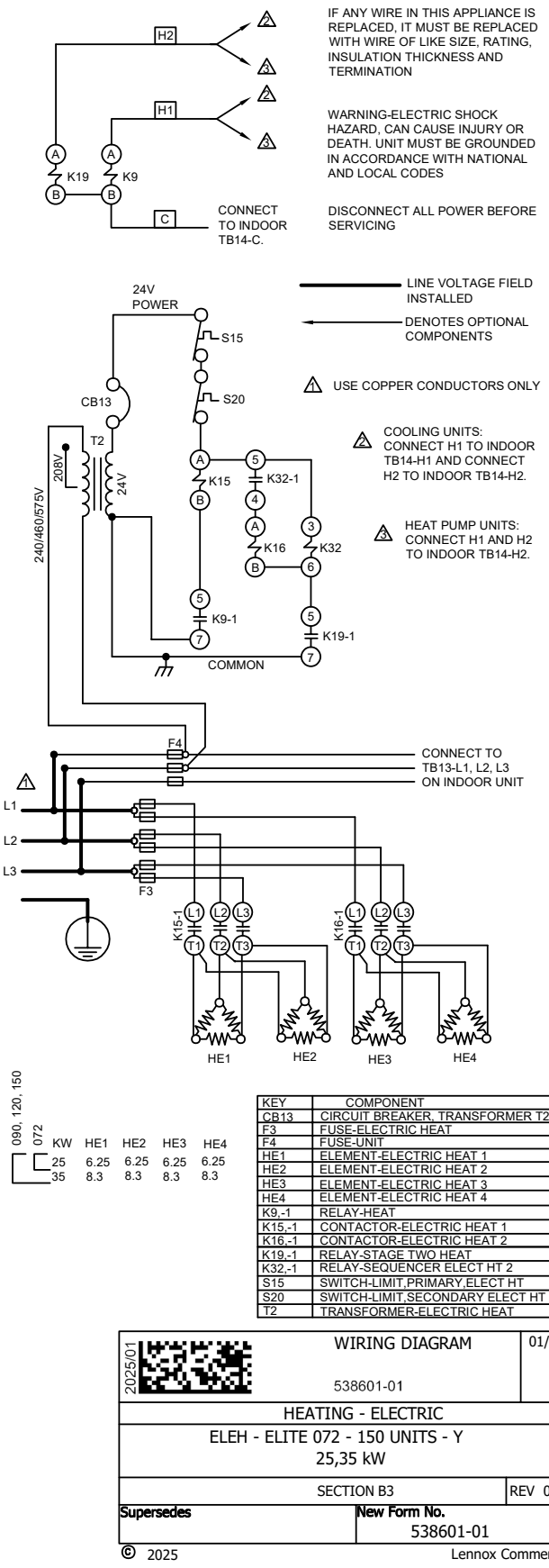
K9−1 closes energizing K15 contactor.

K15−1 closes energizing heating elements HE1 and HE2 assuming primary limit S15 and secondary limit S20 are closed.

K19−1 closes, energizing one side of contactor K16 which energizes one side of K32 relay.

K32−1 closes energizing K16 contactor.

K16−1 closes, energizing heating elements HE3 and HE4 assuming primary limit S15 and secondary limit S20 are closed.



KEY	COMPONENT
CB13	CIRCUIT BREAKER, TRANSFORMER T2
F3	FUSE-ELECTRIC HEAT
F4	FUSE-UNIT
HE1	ELEMENT-ELECTRIC HEAT 1
HE2	ELEMENT-ELECTRIC HEAT 2
HE3	ELEMENT-ELECTRIC HEAT 3
HE4	ELEMENT-ELECTRIC HEAT 4
K9,-1	RELAY-HEAT
K15,-1	CONTACTOR-ELECTRIC HEAT 1
K16,-1	CONTACTOR-ELECTRIC HEAT 2
K19,-1	RELAY-STAGE TWO HEAT
K32,-1	RELAY-SEQUENCER ELECT HT 2
S15	SWITCH-LIMIT,PRIMARY,ELECT HT
S20	SWITCH-LIMIT,SECONDARY ELECT HT
T2	TRANSFORMER-ELECTRIC HEAT

2025/01	WIRING DIAGRAM 538601-01	01/25
HEATING - ELECTRIC		
ELEH - ELITE 072 - 150 UNITS - Y 25,35 kW		
SECTION B3		REV 0
Supersedes	**New Form No.** 538601-01	

FIGURE 11

ELEH ELECTRIC HEAT SEQUENCE OF OPERATION (refer to FIGURE 12) – 2 STAGE HEAT (50kW – Y Volt)

First Stage Heat Call

Heat Pumps (ELKP) - W1 heat demand operates the heat pump in heating mode.

Air Conditioners (ELKC) - W1 heat demand energizes the K9 heat relay.

K9−1 closes energizing K15, K16 contactors.

K15−1 closes energizing heating elements HE1 and HE2 assuming primary limit S15 and secondary limit S20 are closed

K16-1 closes energizing heating elements HE3 and HE4 assuming primary limit S15 and secondary limit S20 are closed.

Second Stage Heat Call

Air Conditioner (ELKC) − W2 heat demand energizes K19 contactor.

K19−1 closes, energizing one side of contactor K17 which energizes one side of K32 relay.

K32−1 closes energizing K17 contactor.

K17−1 closes, energizing heating elements HE5 and HE6 assuming primary limit S15 and secondary limit S20 are closed.

Heat Pumps (ELKP) – W2 heat demand energizes K9 and K19 relays.

K9−1 closes energizing K15, K16 contactors.

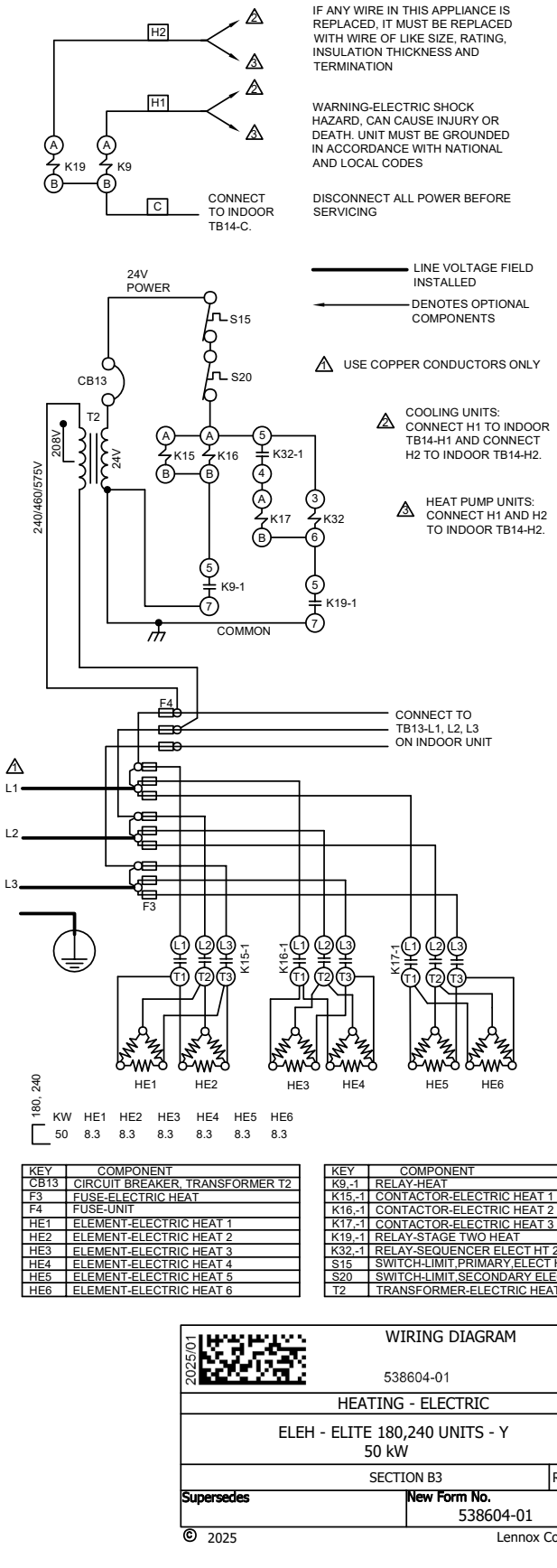
K15−1 closes energizing heating elements HE1 and HE2 assuming primary limit S15 and secondary limit S20 are closed.

K16-1 closes energizing heating elements HE3 and HE4 assuming primary limit S15 and secondary limit S20 are closed.

K19−1 closes, energizing one side of contactor K17 which energizes one side of K32 relay.

K32−1 closes energizing K17 contactor.

K17−1 closes, energizing heating elements HE5 and HE6 assuming primary limit S15 and secondary limit S20 are closed.



KEY	COMPONENT
CB13	CIRCUIT BREAKER, TRANSFORMER T2
F3	FUSE-ELECTRIC HEAT
F4	FUSE-UNIT
HE1	ELEMENT-ELECTRIC HEAT 1
HE2	ELEMENT-ELECTRIC HEAT 2
HE3	ELEMENT-ELECTRIC HEAT 3
HE4	ELEMENT-ELECTRIC HEAT 4
HE5	ELEMENT-ELECTRIC HEAT 5
HE6	ELEMENT-ELECTRIC HEAT 6

KEY	COMPONENT
K9,-1	RELAY-HEAT
K15,-1	CONTACTOR-ELECTRIC HEAT 1
K16,-1	CONTACTOR-ELECTRIC HEAT 2
K17,-1	CONTACTOR-ELECTRIC HEAT 3
K19,-1	RELAY-STAGE TWO HEAT
K32,-1	RELAY-SEQUENCER ELECT HT 2
S15	SWITCH-LIMIT,PRIMARY,ELECT HT
S20	SWITCH-LIMIT,SECONDARY ELECT HT
T2	TRANSFORMER-ELECTRIC HEAT

2025/01	WIRING DIAGRAM 538604-01	01/25
HEATING - ELECTRIC		
ELEH - ELITE 180,240 UNITS - Y 50 kW		
SECTION B3		REV 0
Supersedes	New Form No. 538604-01	

FIGURE 12