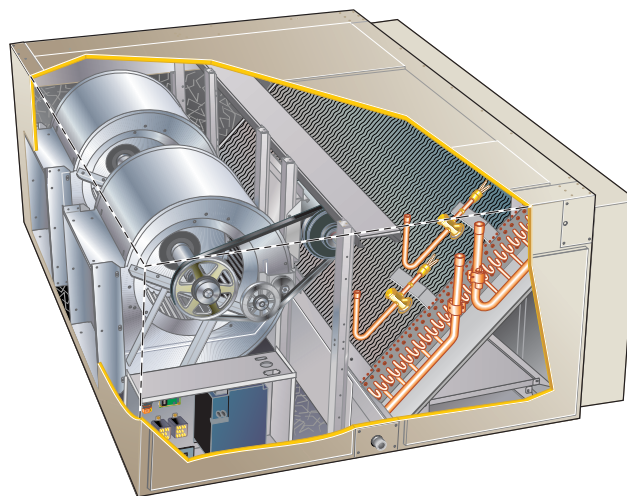


ELXA SERIES AIR HANDLER UNITS

ELXA series blower-coil units are designed for upflow or horizontal air and indoor applications only. ELXA blower units are available in six models; 072, 090, 120, 150, 180 and 240. The units match up with ELXC condensing units and ELXP heat pump units charged with HFC-410A 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.

Table of Contents

SPECIFICATIONS	2
BLOWER DATA	4
I - UNIT COMPONENTS	19
II - REFRIGERATION SYSTEM	20
III - BLOWER SPEED & BELT TENSION.....	20
IV - Electric Heat Components	21
Supply Air Inverter Startup.....	22
Verify Proper Operation	23
Sequence of Operation	24

⚠ 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.

SPECIFICATIONS

General Data	Model No.	EL072XASS	EL090XASD
	Nominal Tonnage	6	7.5
	Blower Type	MSAV® Multi-Stage Air Volume	MSAV® Multi-Stage Air Volume
Connections	No. of Circuits	1	2
	Liquid line o.d. - in. (sweat)	(1) 5/8	(2) 5/8
	Suction/Vapor line o.d. - in. (sweat)	(1) 7/8	(2) 7/8
	Condensate drain - in. (fpt)	1 (NPT)	1 (NPT)
Refrigerant	Not Furnished	R-410A	R-410A
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
	Number of rows	3	4
	Fins per inch	17	17
Blower and Drive		See Blower Drive Specifications Table on page 18.	
	Wheel nominal diameter & 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

General Data	Model No.	EL120XASD	EL150XASD	EL180XASD	EL240XASD
	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	No. of Circuits	2	2	2	2
	Liquid line o.d. - in. (sweat)	(2) 5/8	(2) 5/8	(2) 5/8	(2) 5/8
	Suction/Vapor line o.d. - in. (sweat)	(2) 7/8	(2) 7/8	(2) 1-1/8	(2) 1-1/8
	Condensate drain - in. (fpt)	1 (NPT)	1 (NPT)	1 (NPT)	1 (NPT)
Refrigerant	Not Furnished	R-410A	R-410A	R-410A	R-410A
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
	Number of rows	4	4	3	4
	Fins per inch	17	17	17	17
Blower and Drive		See Blower Drive Specifications Table on page 18.			
	Wheel nominal diameter & 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	Catalog No.	072	090	120	150	180	240
BLOWER							
Blower Motor and Drive Kits	Factory						See page 18
CABINET							
Corrosion Protection	Factory	O	O	O	O	O	O
Float Switch	16B29	X	X	X	X	X	X
CONTROL SYSTEMS							
BACnet® Module and Enclosure Kit	17A08	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	Catalog No.	072	090	120	150	180	240
ELECTRIC HEAT							
10 kW	208/240V-3ph - T3EH0010LM1Y	46W50	X	X	X	X	
	460V-3ph - T3EH0010LM1G	46W55	X	X	X	X	
	575V-3ph - T3EH0010LM1J	46W60	X	X	X	X	
15 kW	208/240V- 3ph - T3EH0015LM1Y	46W51	X	x	X	X	
	460V-3ph - T3EH0015LM1G	46W56	X	X	X	X	
	575V-3ph - T3EH0015LM1J	46W61	X	X	X	X	
25 kW	208/240V-3ph - T3EH0025LM1Y	46W52	X	X	X	X	
	460V-3ph - T3EH0025LM1G	46W57	X	X	X	X	
	575V-3ph - T3EH0025LM1J	46W62	X	X	X	X	
35 kW	208/240V-3ph - T3EH0035LM1Y	46W53		X	X	X	
	460V-3ph - T3EH0035LM1G	46W58		X	X	X	
	575V-3ph - T3EH0035LM1J	46W63		X	X	X	
20 kW	208/240V-3ph - T3EH0020N-1Y	46W65				X	X
	460V-3ph - T3EH0020N-1G	46W69				X	X
	575V-3ph - T3EH0020N-1J	46W73				X	X
30 kW	208/240V-3ph - T3EH0030N-1Y	46W66				X	X
	460V-3ph - T3EH0030N-1G	46W70				X	X
	575V-3ph - T3EH0030N-1J	46W74				X	X
40 kW	208/240V-3ph - T3EH0040N-1Y	49W39				X	X
	460V-3ph - T3EH0040N-1G	49W40				X	X
	575V-3ph - T3EH0040N-1J	49W41				X	X
50 kW	208/240V-3ph - T3EH0050N-1Y	46W67				X	X
	460V-3ph - T3EH0050N-1G	46W71				X	X
	575V-3ph - T3EH0050N-1J	46W75				X	X
ECONOMIZER							
Standard Economizers (Not for Title 24)							
	A2ECON31L-1	17A10	X	X			
	A2ECON31M-1	17A11			X	X	
	A2ECON31N-1	17A12				X	X
High Performance Economizers (Approved for California Title 24 Building Standards)							
	A2ECON34L-1	17A13	X	X			
	A2ECON34M-1	17A14			X	X	
	A2ECON34N-1	17A15				X	X
Economizer Controls (Not for Title 24)							
Single Enthalpy Control (Standard Economizer)	T1SNSR60AN1	17W71	X	X	X	X	X
Single Enthalpy Control (High Performance Economizer)	C1NSR61FF1	11G21	X	X	X	X	X
NOTE - FOR DIFFERENTIAL ENTHALPY CONTROL ORDER TWO OF THE SAME CONTROLS ABOVE.							
HOT WATER COIL							
	T2HWCL10LM1-	44W20	X	X	X	X	
	T2HWCL10N-1-	44W21				X	X
INDOOR AIR QUALITY							
Air Filters							
¹ Healthy Climate®	MERV 8 - A2FLTR16LS1-	16C78	X	X	X	X	X
Air Filters (16 x 25 x 4)	MERV 13 (high efficiency) - A2FLTR41LS1-	16C79	X	X	X	X	X
4-Inch Filter Mounting Kits	A2FLTR70L-1-	17A05	X	X			
	A2FLTR70M-1-	17A06			X	X	
	A2FLTR70N-1-	17A07				X	X
Indoor Air Quality (CO₂) Sensors							
Sensor - Wall-mount, off-white plastic cover with LCD display	C0SNSR50AE1L	77N39	X	X	X	X	X
Sensor - Wall-mount, off-white plastic cover, no display	C0SNSR52AE1L	87N53	X	X	X	X	X
Sensor - Black plastic case with LCD display, rated for plenum mounting	C0SNSR51AE1L	87N52	X	X	X	X	X
Sensor - Wall-mount, black plastic case, no display, rated for plenum mounting	C0SNSR53AE1L	87N54	X	X	X	X	X
CO ₂ Sensor Duct Mounting Kit	C0MISC19AE1-	85L43	X	X	X	X	X
Aspiration Box - for duct mounting non-plenum rated CO ₂ sensor (77N39)	C0MISC16AE1-	90N43	X	X	X	X	X
REFRIGERANT SYSTEM							
Heat Pump Check Valve Kit	A2CVLV11N-1-	16G33					X

NOTE - The catalog and model numbers that appear here are for ordering field installed accessories only.

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.

² Step-down transformer (460V or 575V to 208/230V-1ph) or separate power supply is required.

BLOWER DATA

EL072XA BLOWER PERFORMANCE

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 pages 11 and 12.

Then determine from table the blower motor hp and drive rpm required. See page 10 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

EL090XA BLOWER PERFORMANCE

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 pages 11 and 12.

Then determine from table the blower motor hp and drive rpm required. See page 10 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

EL120XA BLOWER PERFORMANCE

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 pages 11 and 12.

Then determine from table the blower motor hp and drive rpm required. See page 10 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

EL150XA BLOWER PERFORMANCE

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 pages 11 and 12.

Then determine from table the blower motor hp and drive rpm required. See page 10 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

EL180XA BLOWER PERFORMANCE

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 pages 11 and 12.

Then determine from table the blower motor hp and drive rpm required. See page 10 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

EL240XA BLOWER PERFORMANCE

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 pages 11 and 12.

Then determine from table the blower motor hp and drive rpm required. See page 10 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	---	---	---	---	---
High	878 - 1097	2	2	O	---	---	---	---	---
Low	562 - 796	2	2	---	O	---	---	---	---
Standard	796 - 1030	2	2	---	S	---	---	---	---
High	865 - 1071	3	3	---	O	---	---	---	---
Low	560 - 793	2	2	---	---	O	---	---	---
Standard	793 - 1027	3	3	---	---	S	---	---	---
High	865 - 1071	3	3	---	---	O	---	---	---
Low	653 - 887	3	3	---	---	---	O	---	---
Standard	846 - 1081	5	5	---	---	---	S	---	---
High	896 - 1146	5	5	---	---	---	O	---	---
Low	598 - 820	3	3	---	---	---	---	O	---
Standard	820 - 1041	5	5	---	---	---	---	S	---
High	875 - 1111	5	5	---	---	---	---	O	---
Low	689 - 875	5	5	---	---	---	---	---	O
Standard	810 - 1036	7.5	7.5	---	---	---	---	---	S
High	963 - 1232	7.5	7.5	---	---	---	---	---	O

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.

BLOWER MOTOR ELECTRICAL DATA

		Model No.	072	090	120	150	180	240
1.5 HP Blower Motor	Maximum Overcurrent Protection / Minimum Circuit Ampacity	208/230/-60hz-3ph	15 / 8	---	---	---	---	---
		460V-60hz-3ph	15 / 4	---	---	---	---	---
		575V-60hz-3ph	15 / 3	---	---	---	---	---
	Blower Motor Full Load Amps	208/230/-60hz-3ph	5.7	---	---	---	---	---
		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	15 / 10	15 / 10	---	---	---
		460V-60hz-3ph	15 / 5	15 / 5	15 / 5	---	---	---
		575V-60hz-3ph	15 / 4	15 / 4	15 / 4	---	---	---
	Blower Motor Full Load Amps	208/230/-60hz-3ph	7.5	7.5	7.5	---	---	---
		460V-60hz-3ph	3.4	3.4	3.4	---	---	---
		575V-60hz-3ph	2.7	2.7	2.7	---	---	---
3 HP Blower Motor	Maximum Overcurrent Protection / Minimum Circuit Ampacity	208/230/-60hz-3ph	---	20 / 14	20 / 14	20 / 14	20 / 14	---
		460V-60hz-3ph	---	15 / 6	15 / 6	15 / 6	15 / 6	---
		575V-60hz-3ph	---	15 / 5	15 / 5	15 / 5	15 / 5	---
	Blower Motor Full Load Amps	208/230/-60hz-3ph	---	10.6	10.6	10.6	10.6	---
		460V-60hz-3ph	---	4.8	4.8	4.8	4.8	---
		575V-60hz-3ph	---	3.9	3.9	3.9	3.9	---
5 HP Blower Motor	Maximum Overcurrent Protection / Minimum Circuit Ampacity	208/230/-60hz-3ph	---	---	---	35 / 21	35 / 21	35 / 21
		460V-60hz-3ph	---	---	---	15 / 10	15 / 10	15 / 10
		575V-60hz-3ph	---	---	---	15 / 8	15 / 8	15 / 8
	Blower Motor Full Load Amps	208/230/-60hz-3ph	---	---	---	16.7	16.7	16.7
		460V-60hz-3ph	---	---	---	7.6	7.6	7.6
		575V-60hz-3ph	---	---	---	6.1	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

EL072-090XA 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

EL120-150XA 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

EL180-240XA 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 - EL072XA

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	2 hp	1.5 hp	2 hp
10 kW	1	208	7.5	25,600	34	36	35	40
	1	220	8.4	28,700	38	40	40	40
		230	9.2	31,400				
		240	10	34,100				
	1	440	8.4	28,700	19	20	20	20
		460	9.2	31,400				
		480	10	34,100				
	1	550	8.4	28,700	15	16	15	20
		575	9.2	31,400				
600		10	34,100					
15 kW	1	208	11.3	38,400	47	49	50	50
	1	220	12.6	43,000	53	55	60	60
		230	13.5	47,000				
		240	15	51,200				
	1	440	12.6	43,000	27	27	30	30
		460	13.5	47,000				
		480	15	51,200				
	1	550	12.6	43,000	21	22	25	25
		575	13.5	47,000				
600		15	51,200					
25 kW	³ 2	208	18.8	64,100	73	75	80	80
	³ 2	220	21	71,700	83	85	90	90
		230	23	78,300				
		240	25	85,300				
	1	440	21	71,700	42	42	45	45
		460	23	78,300				
		480	25	85,300				
	1	550	21	71,700	34	34	35	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 - EL090XA

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	36	40	40	40	
		1	220	8.4	28,700	40	44	40	45
			230	9.2	31,400				
	1	240	10	34,100	20	21	20	25	
		440	8.4	28,700					
		460	9.2	31,400					
	1	480	10	34,100	16	17	20	20	
		550	8.4	28,700					
		575	9.2	31,400					
	15 kW	1	208	11.3	38,400	49	53	50	60
1			220	12.6	43,000	55	59	60	60
			230	13.5	47,000				
1		240	15	51,200	27	29	30	30	
		440	12.6	43,000					
		460	13.5	47,000					
1		480	15	51,200	22	23	25	25	
		550	12.6	43,000					
		575	13.5	47,000					
25 kW	³ 2	208	18.8	64,100	75	79	80	80	
		³ 2	220	21	71,700	85	89	90	90
			230	23	78,300				
	1	240	25	85,300	42	44	45	45	
		440	21	71,700					
		460	23	78,300					
	1	480	25	85,300	34	35	35	35	
		550	21	71,700					
		575	23	78,300					
35 kW	³ 2	208	25	85,300	97	100	100	100	
		³ 2	220	28	95,500	110	114	110	125
			230	30.6	104,400				
	1	240	33.3	113,700	55	57	60	60	
		440	28	95,500					
		460	30.6	104,400					
	1	480	33.3	113,700	44	45	45	45	
		550	28	95,500					
		575	30.6	104,400					
1	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 - EL120XA

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	36	40	40	40
	1	220	8.4	28,700	40	44	40	45
		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	16	17	20	20
		575	9.2	31,400				
		600	10	34,100				
15 kW	1	208	11.3	38400	49	53	50	60
	1	220	12.6	43,000	55	59	60	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	22	23	25	25
		575	13.5	47,000				
		600	15	51,200				
25 kW	³ 2	208	18.8	64,100	75	79	80	80
	³ 2	220	21	71,700	85	89	90	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	34	35	35	35
		575	23	78,300				
		600	25	85,300				
35 kW	³ 2	208	25	85,300	97	100	100	100
	³ 2	220	28	95,500	110	114	110	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	44	45	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 - EL150XA

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	40	47	40	50
	1	220	8.4	28,700	44	51	45	60
		230	9.2	31,400				
		240	10	34,100				
	1	440	8.4	28,700	21	25	25	25
		460	9.2	31,400				
		480	10	34,100				
	1	550	8.4	28,700	17	20	20	20
575		9.2	31,400					
600		10	34,100					
15 kW	1	208	11.3	38,400	53	60	60	60
	1	220	12.6	43,000	59	66	60	70
		230	13.5	47,000				
		240	15	51,200				
	1	440	12.6	43,000	29	32	30	35
		460	13.5	47,000				
		480	15	51,200				
	1	550	12.6	43,000	23	26	25	30
575		13.5	47,000					
600		15	51,200					
25 kW	³ 2	208	18.8	64,100	79	86	80	90
	³ 2	220	21	71,700	89	96	90	100
		230	23	78,300				
		240	25	85,300				
	1	440	21	71,700	44	48	45	50
		460	23	78,300				
		480	25	85,300				
	1	550	21	71,700	35	38	35	40
575		23	78,300					
600		25	85,300					
35 kW	³ 2	208	25	85,300	100	108	100	110
	³ 2	220	28	95,500	114	121	125	125
		230	30.6	104,400				
		240	33.3	113,700				
	1	440	28	95,500	57	60	60	60
		460	30.6	104,400				
		480	33.3	113,700				
	1	550	28	95,500	45	48	45	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 - EL180XA

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	65	73	70	80
	1	220	16.5	56,500	73	81	80	90
		230	18.1	61,800				
		240	19.7	67,300				
	1	440	16.8	57,500	37	40	40	40
		460	18.4	62,900				
		480	20	68,300				
	1	550	16.8	57,300	29	32	30	35
575		18.4	62,600					
600		20	68,300					
30 kW	2	208	22.5	76,900	92	99	100	100
	2	220	25.2	86,100	104	112	110	125
		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	41	44	45	45
575		27.5	94,200					
600		30	102,500					
40 kW	2	208	29.3	100,000	115	123	125	125
	2	220	32.8	112,000	131	139	150	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	53	56	60	60
575		36.7	125,500					
600		40	136,600					
50 kW	2	208	36.1	123,200	114	121	125	125
	2	220	40.3	137,700	129	137	150	150
		230	44.1	150,600				
		240	48	163,900				
	2	440	42	143,400	74	81	80	90
		460	45.9	156,700				
		480	50	170,800				
	2	550	42	143,500	62	69	70	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 - EL240XA

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	73	82	80	90
	1	220	16.5	56,500	81	90	90	90
		230	18.1	61,800				
		240	19.7	67,300				
	1	440	16.8	57,500	40	44	40	45
		460	18.4	62,900				
		480	20	68,300				
	1	550	16.7	57,300	32	36	35	40
575		18.4	62,600					
600		20	68,300					
30 kW	2	208	22.5	76,900	99	109	100	110
	2	220	25.2	86,100	112	121	125	125
		230	27.6	94,100				
		240	30	102,500				
	1	440	25.2	86,100	55	59	60	60
		460	27.6	94,100				
		480	30	102,500				
	1	550	25.2	86,100	44	48	45	50
575		27.6	94,200					
600		30	102,500					
40 kW	2	208	29.3	100,000	123	132	125	150
	2	220	32.8	112,000	139	148	150	150
		230	35.8	122,300				
		240	39	133,200				
	1	440	32.8	112,000	69	73	70	80
		460	35.9	122,400				
		480	39	133,200				
	1	550	33.6	114,800	56	60	60	60
575		36.7	125,500					
600		40	136,600					
50 kW	2	208	36.1	123,200	121	131	125	150
	2	220	40.3	137,700	137	146	150	150
		230	44.1	150,600				
		240	48	163,900				
	2	440	42	143,400	81	91	90	100
		460	45.9	156,700				
		480	50	170,800				
	2	550	42	143,500	69	79	70	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.

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 single-pole double throw relay used to control the economizer. When there is a call for cooling, K43-1 contacts close energizing the economizer. See wiring diagram.

C – Blower Motor B3

See page 10 for blower drive specifications and blower motor electrical data.

D – Terminal Block TB1

All field wiring connections are made at terminal block TB1.

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 $29^{\circ}\text{F} \pm 3^{\circ}\text{F}$ ($-1.7^{\circ}\text{C} \pm 1.7^{\circ}\text{C}$) on a temperature drop and closes at $58^{\circ}\text{F} \pm 4^{\circ}\text{F}$ ($14.4^{\circ}\text{C} \pm 2.2^{\circ}\text{C}$) 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.

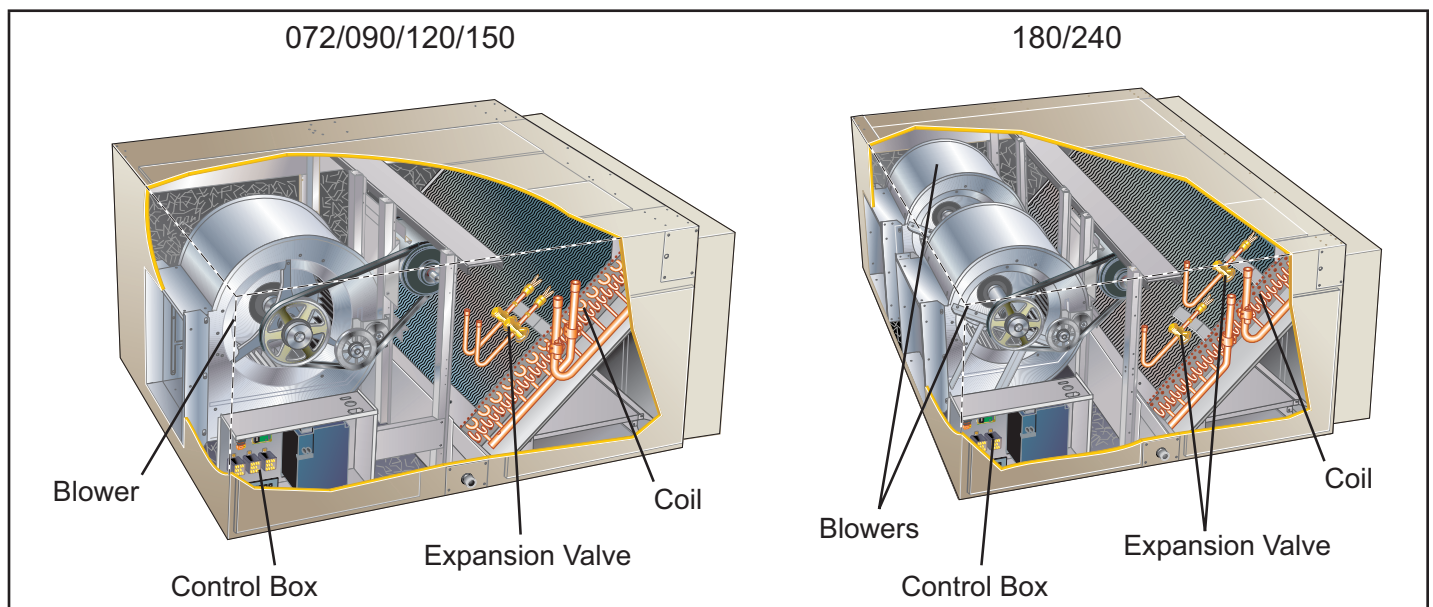


FIGURE 1. Unit Components

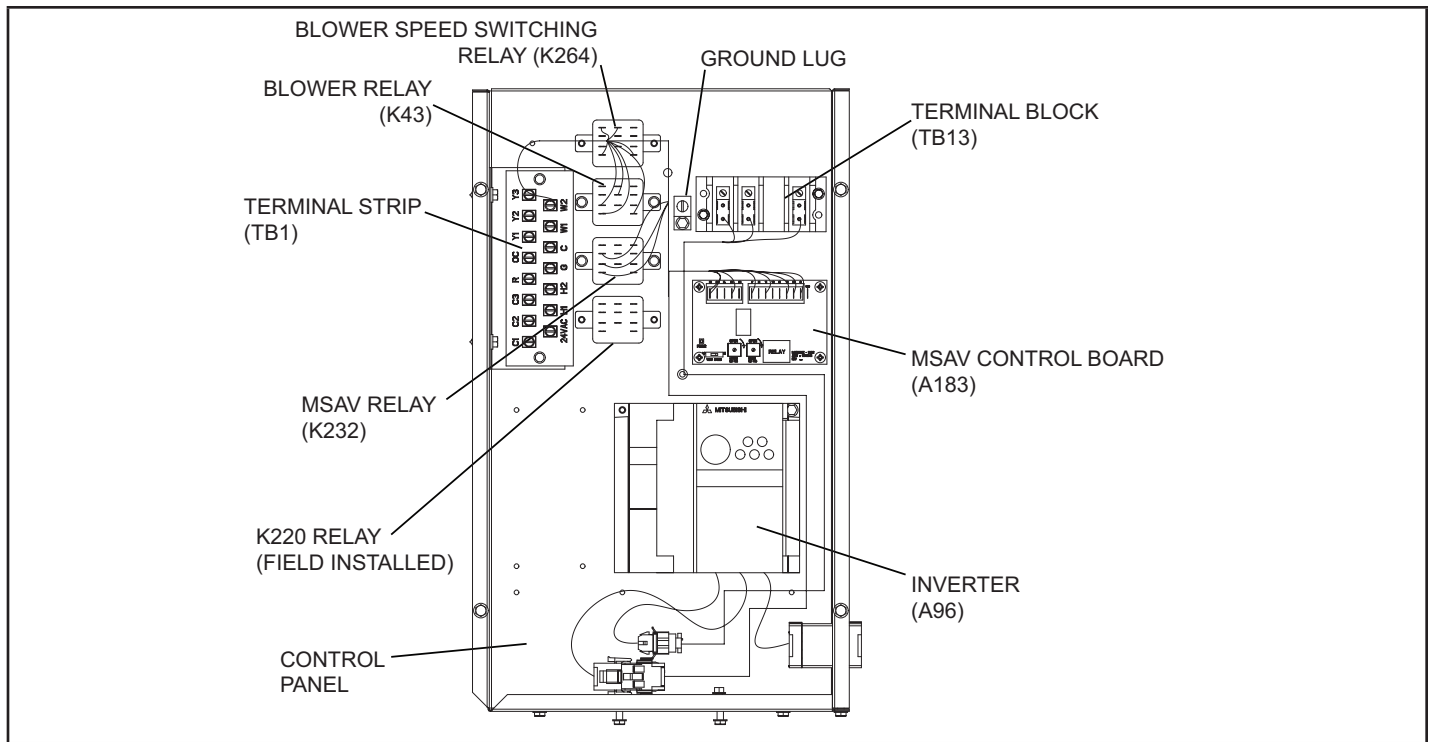


FIGURE 2. Unit Control Box Arrangement

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

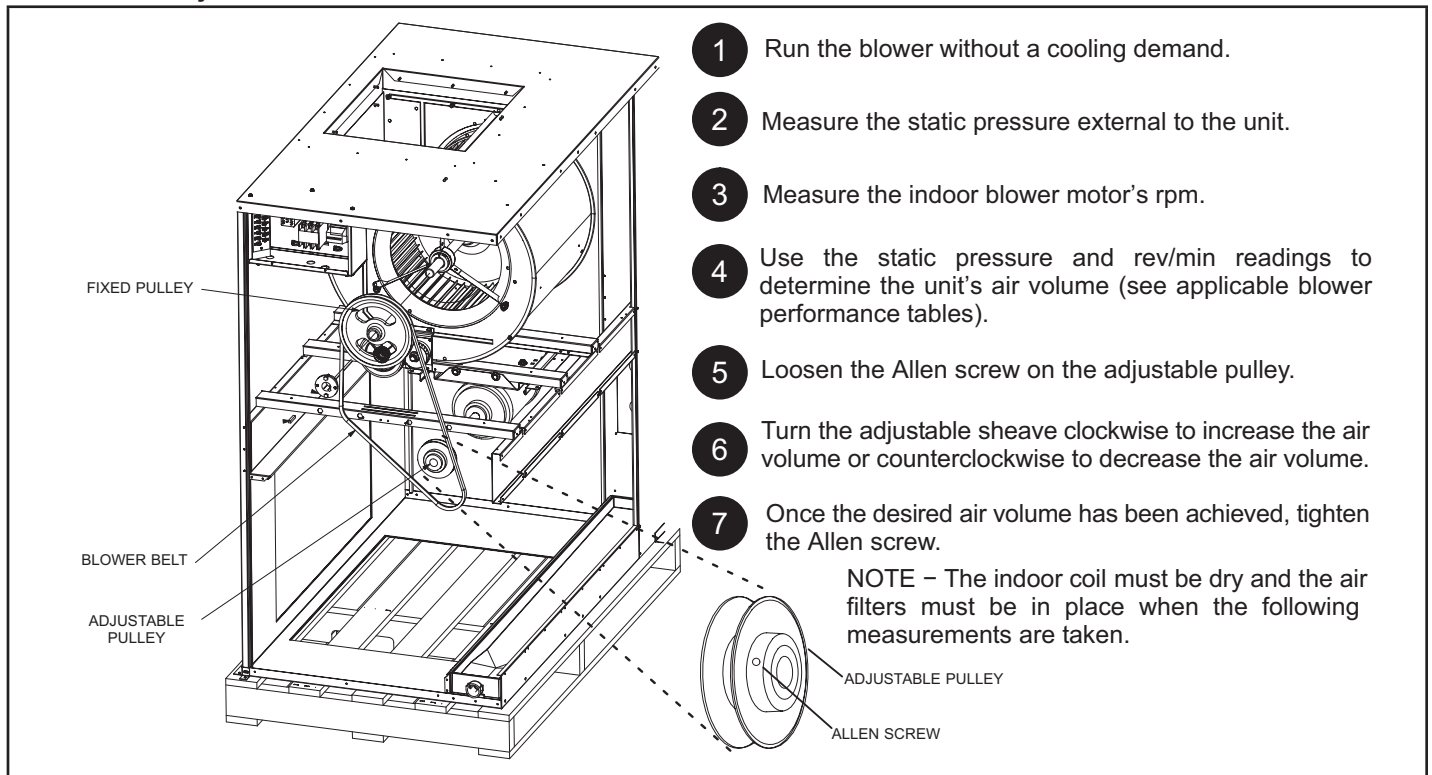


FIGURE 3

Adjusting Belt Tension

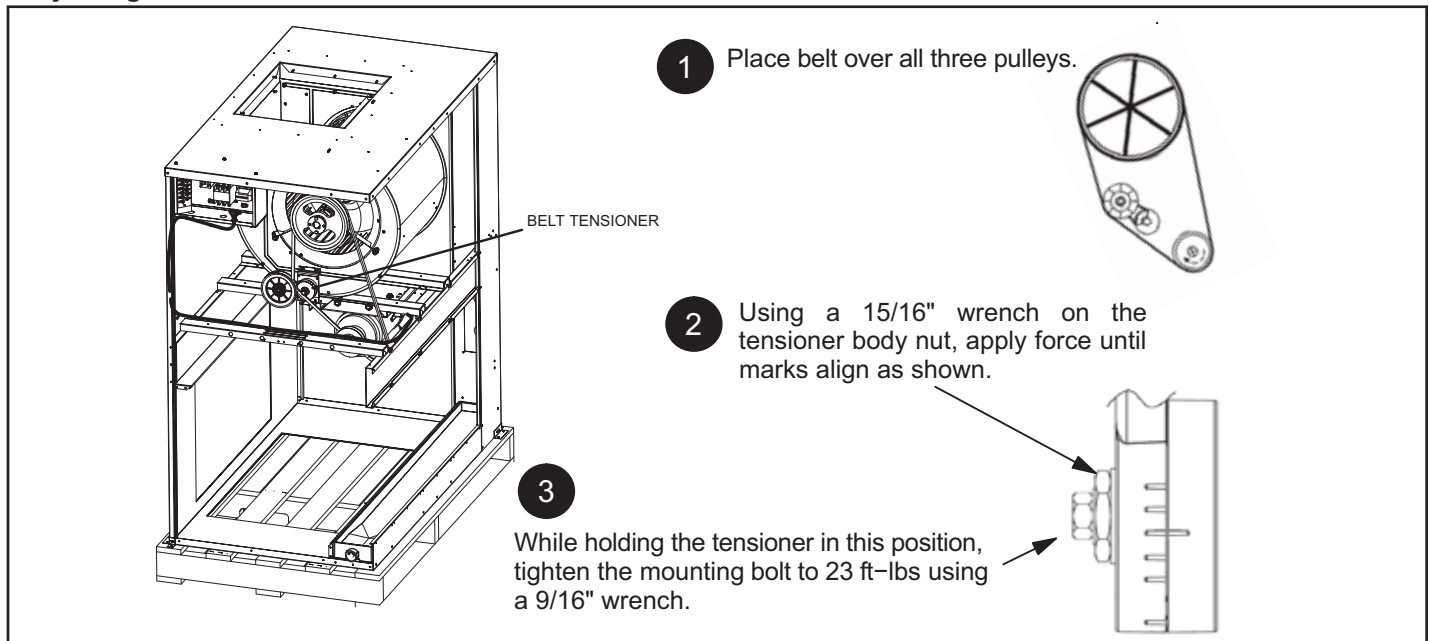


FIGURE 4

IV – Electric Heat Components

See electric heat tables (table of contents) for electric heat matchups. T3EH- 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. Each stage is energized independently by a three-pole double-break contactor and is protected by safety limits.

2 – Contactors K15 and K16

Contactors K15 and K16 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.

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 ELXA 24 volts components from the T3EH- 24 volt com-

ponents. 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 K15. On a second stage heat call K19 is energized. When K19-1 closes contactor K16 is energized which energizes relay K32.

5 – Fuse F3

Heating elements in all T3EH- 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 blower.

7 – Transformer T2

T2 is line voltage to 24VAC which provides 24VAC to power to all T3EH- 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, contactor K15 is de-energized. When K15 is de-energized, first stage and all subsequent stages of heat are de-energized. Since the indoor blower is controlled by thermostat demand (K9 remains energized), the indoor blower 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). Each limit is connected in series with one leg of the three-phase element assembly. The third leg of each assembly is not equipped with a limit. Three-phase operating characteristics allow one of the other two limits to protect the third leg.

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 17.

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.

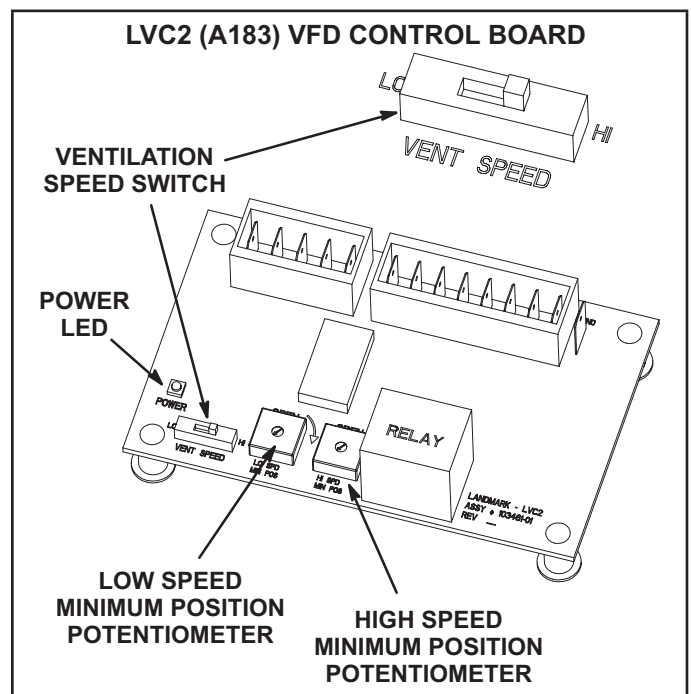


FIGURE 5

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.

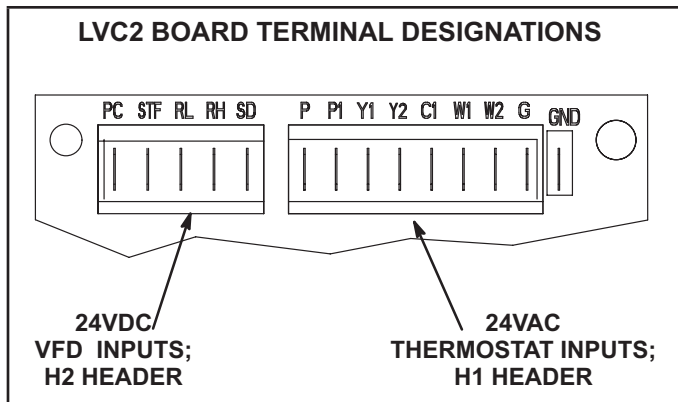


FIGURE 6

- 4 - If there is no thermostat signal, troubleshoot back toward the thermostat.
- 5 - Check the power LED on the board. See figure 17.
- 6 - If the power LED is not on, check voltage between LVC2 terminals PC (H2-1) and SD (H2-5). Voltage should read 24VDC.
- 7 - 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.
- 8 - 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.
- 9 - 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	

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.

Sequence of Operation

EL072/240XA – BLOWER COOLING SEQUENCE OF OPERATION (refer to figures 7, 8) – ALL (NO ECONO)

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.

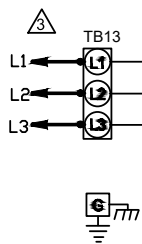
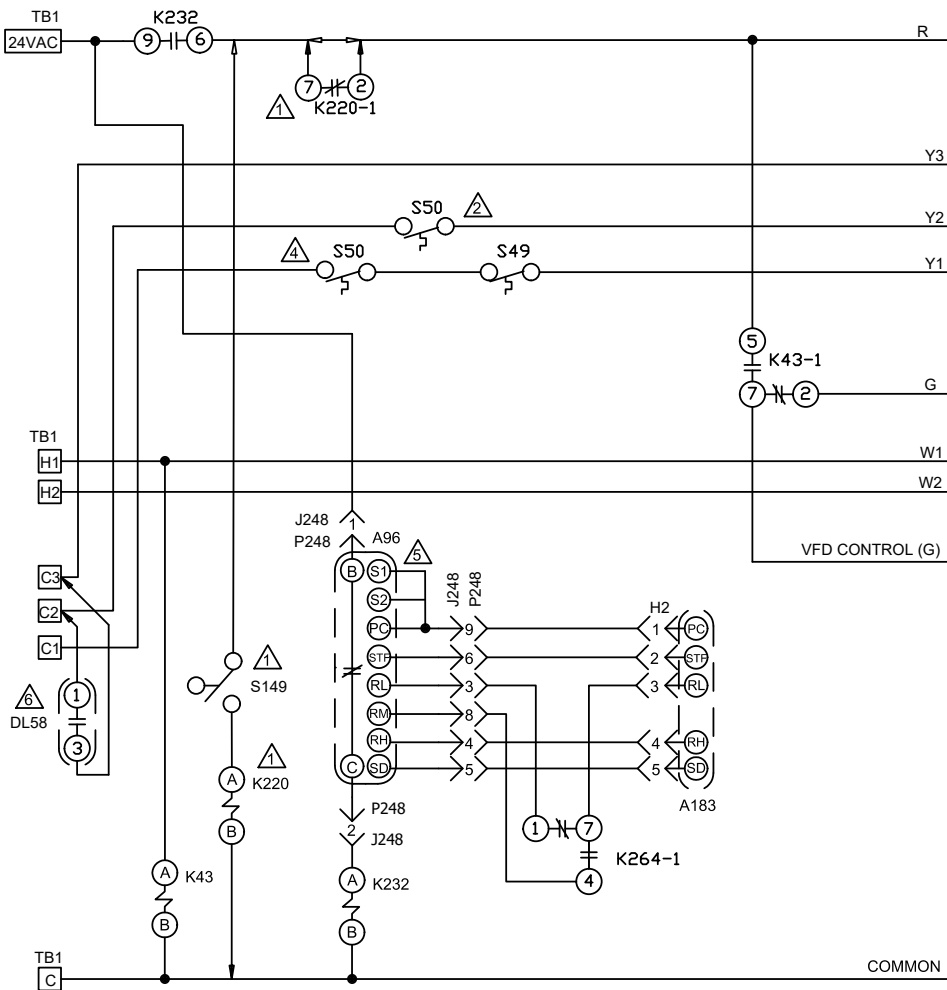
EL072/240XA – BLOWER HEATING SEQUENCE OF OPERATION (refer to figures 7, 8) – ALL

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.

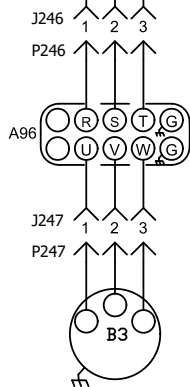


- ⚠ S149 SWITCH AND K220 RELAY MAY BE FIELD SUPPLIED OR USE AVAILABLE KIT
- ⚠ S50 LOCATION ON UNITS WITH TWO COMPRESSORS
- ⚠ USE COPPER CONDUCTORS ONLY
- ⚠ S50 LOCATION ON UNITS WITH ONE COMPRESSOR
- ⚠ A96-S1, S2 CONNECTIONS ON E800 MODELS ONLY
- ⚠ DL58 DELAY MAY BE FIELD SUPPLIED OR USE AVAILABLE KIT

IF ANY WIRE IN THIS APPLIANCE IS REPLACED, IT MUST BE REPLACED WITH WIRE OF LIKE SIZE, RATING, INSULATION THICKNESS AND TERMINATION

WARNING-ELECTRIC SHOCK HAZARD, CAN CAUSE INJURY OR DEATH. UNIT MUST BE GROUNDED IN ACCORDANCE WITH NATIONAL AND LOCAL CODES

DISCONNECT ALL POWER BEFORE SERVICING

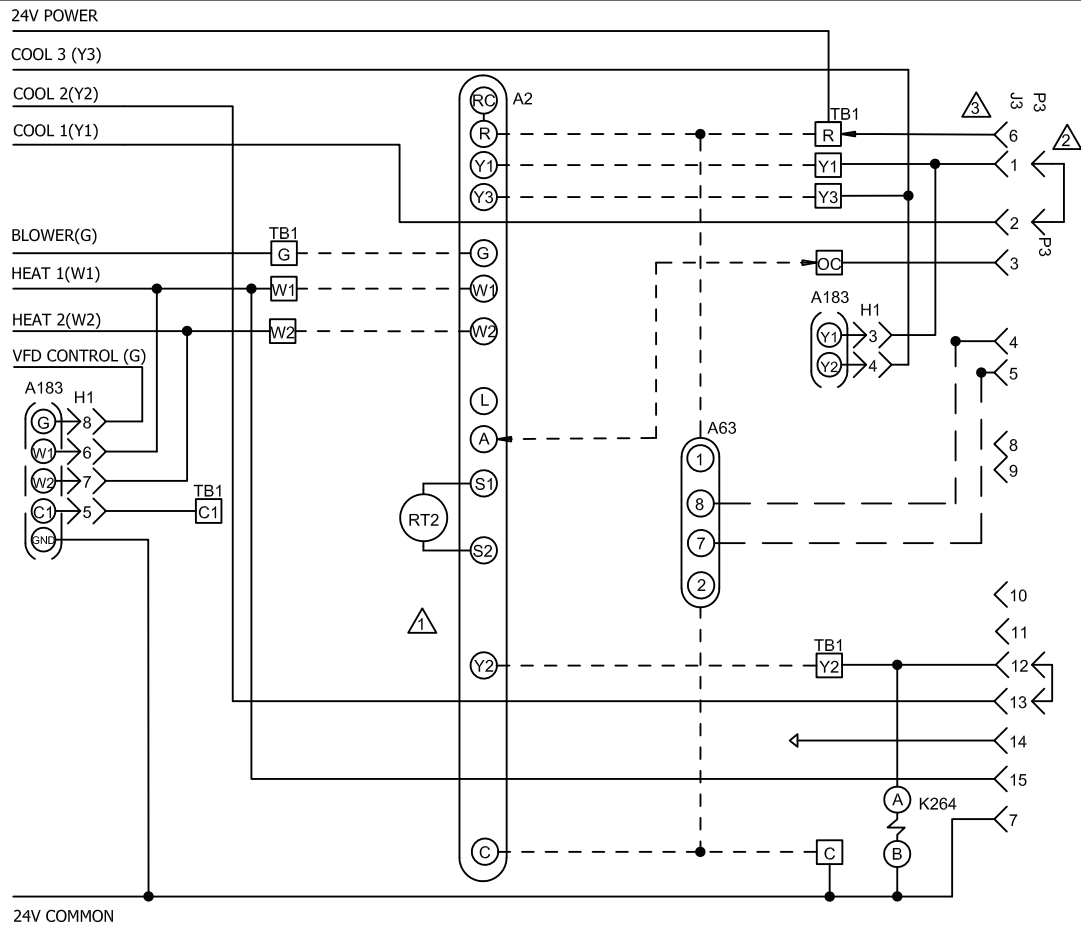


KEY	COMPONENT
A96	CONTROL, INVERTER
A183	CONTROL, VFD BOARD
B3	MOTOR-BLOWER
DL58	DELAY, ADJUSTABLE, ON MAKE
K43,-1	RELAY-ECONOMIZER BLOWER
K220,-1	RELAY-OVERFLOW
K232,-1	RELAY-INVERTER PROTECTION
K264,-1	RELAY-A96 SIGNAL SWITCHING
J/P246	JACK/PLUG POWER TO VFD
J/P247	JACK/PLUG VFD TO MTR
J/P248	JACK/PLUG VFD CONTROL
S49	SWITCH-FREEZESTAT COMPRESSOR 1
S50	SWITCH-FREEZESTAT COMPRESSOR 2
S149	SWITCH-OVERFLOW
TB1	TERMINAL STRIP, CLASS II VOLTAGE
TB13	TERMINAL BLOCK, POWER DISTRIBUTOR

- DENOTES OPTIONAL COMPONENTS
- - - CLASS II FIELD WIRING

2022/10	WIRING DIAGRAM	10/22
	537900-02	
BLOWER		
EL072-240XA - Y,G,J WITH VFD ID BLOWER		
SECTION B1		REV. 2
Supersedes	New Form No.	
537900-01	537900-02	

FIGURE 7



KEY	COMPONENT
A2	SENSOR, ELECTRONIC THERMOSTAT
A63	SENSOR, CO2
A183	CONTROL, VFD BOARD
J3	JACK, UNIT ECONOMIZER
K264,-1	RELAY-A96 SIGNAL SWITCHING
P3	PLUG, ECONOMIZER BYPASS
RT2	SENSOR, REMOTE THERMOSTAT
TB1	TERMINAL STRIP, CLASS II VOLTAGE

- THERMOSTAT SUPPLIED BY USER
- REMOVE P3 WHEN ECONOMIZER IS USED
- J3 MAXIMUM LOAD 20VA 24VAC CLASS II
- DENOTES OPTIONAL COMPONENTS
- CLASS II FIELD WIRING

2022/02		WIRING DIAGRAM	02/22
		537901-02	
ACCESSORIES			
THERMOSTAT EL072-240XA UNITS WITH VFD ID BLOWER			
SECTION C			REV. 0
Supersedes	New Form No.		
537901-01	537901-02		

FIGURE 8. Typical Thermostat Wiring

T3EH ELECTRIC HEAT SEQUENCE OF OPERATION (refer to figure 9) - 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.

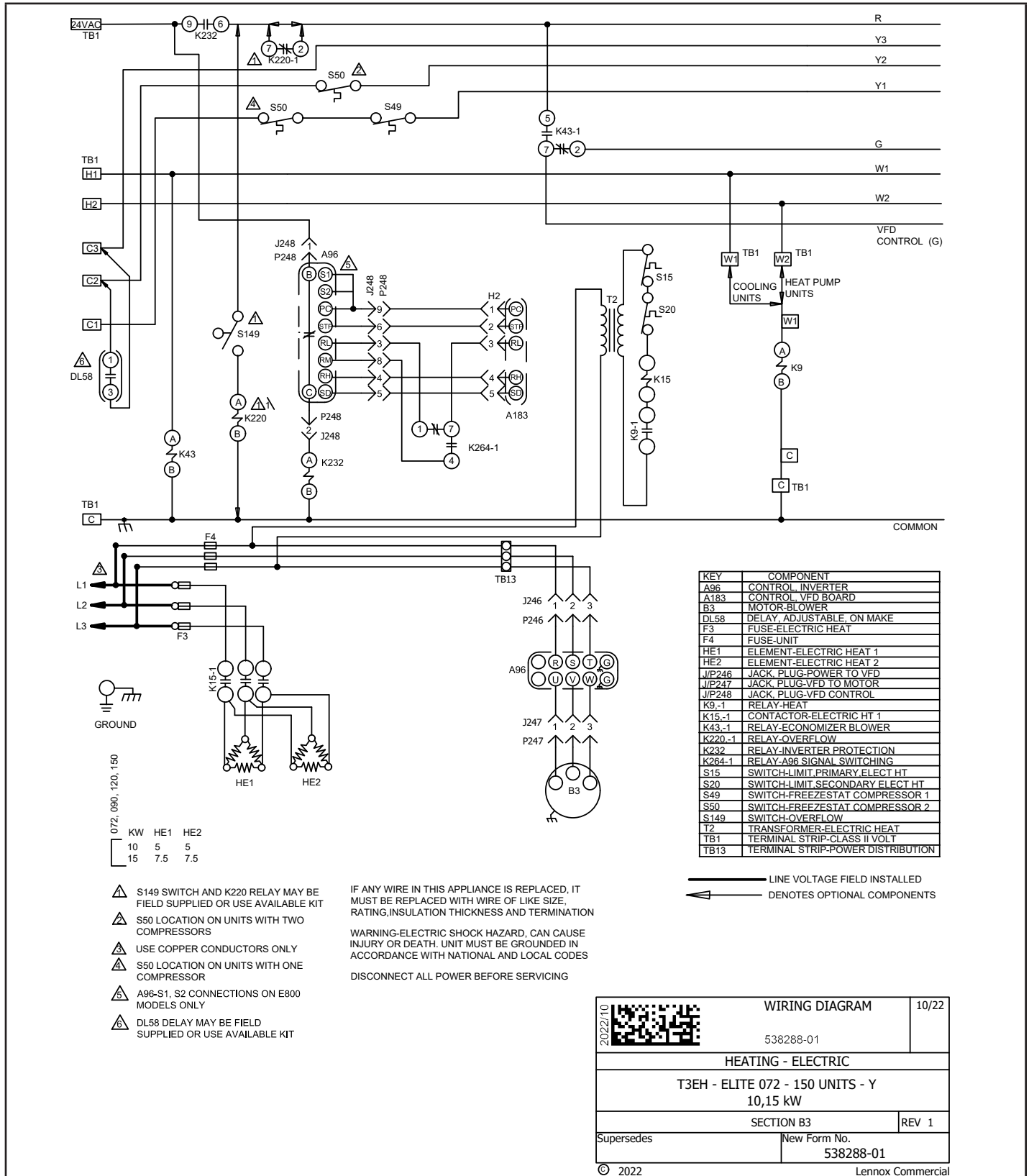


FIGURE 9

T3EH ELECTRIC HEAT SEQUENCE OF OPERATION (refer to figure 10) – 2 STAGE HEAT

First Stage Heat Call

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

Air Conditioners (ELXC) - 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 (ELXC) – 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 (ELXP) – 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.

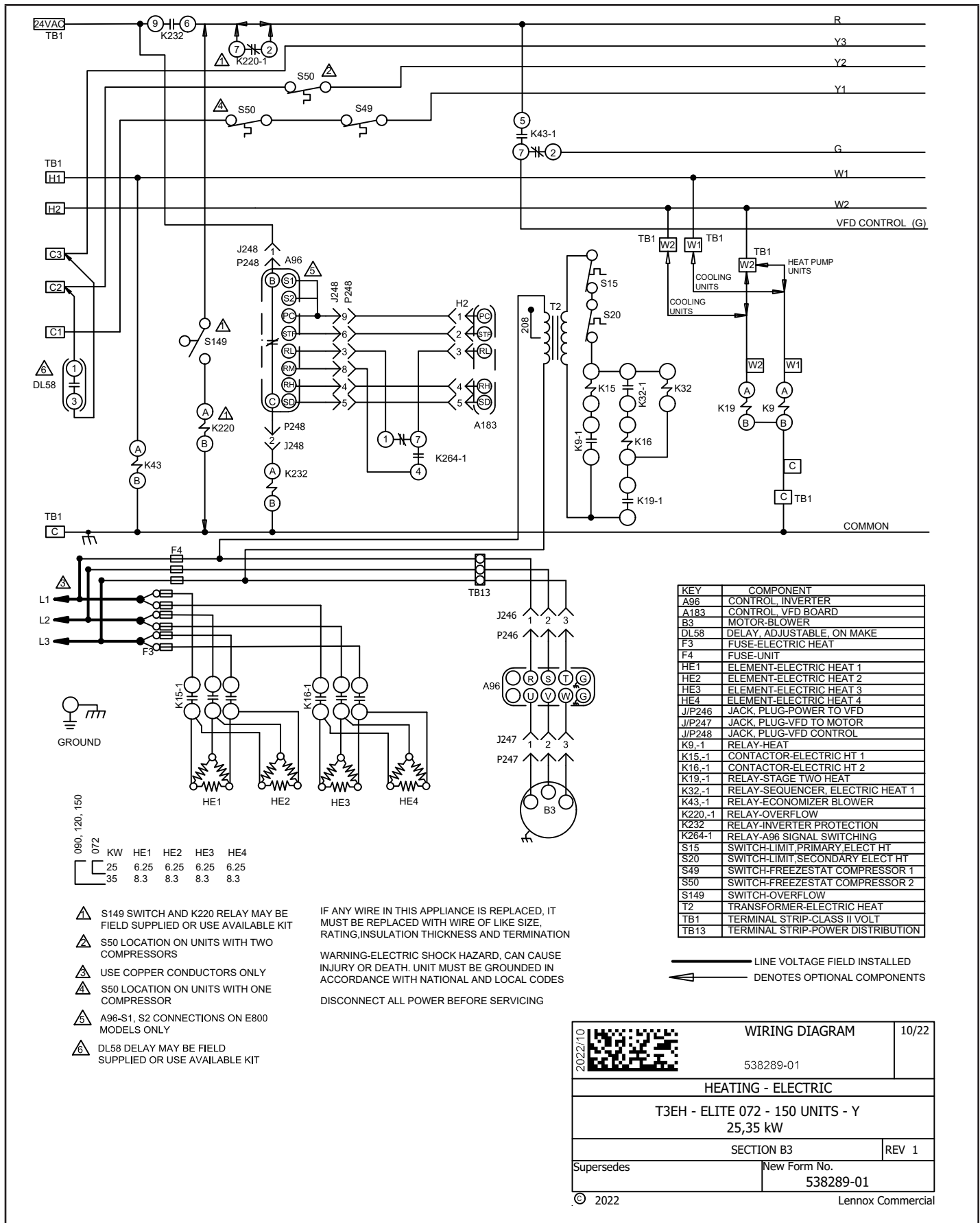


FIGURE 10

T3EH ELECTRIC HEAT SEQUENCE OF OPERATION (refer to figure 11) – 2 STAGE HEAT (50kW – Y Volt)

First Stage Heat Call

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

Air Conditioners (ELXC) - 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 (ELXC) – 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 (ELXP) – 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.

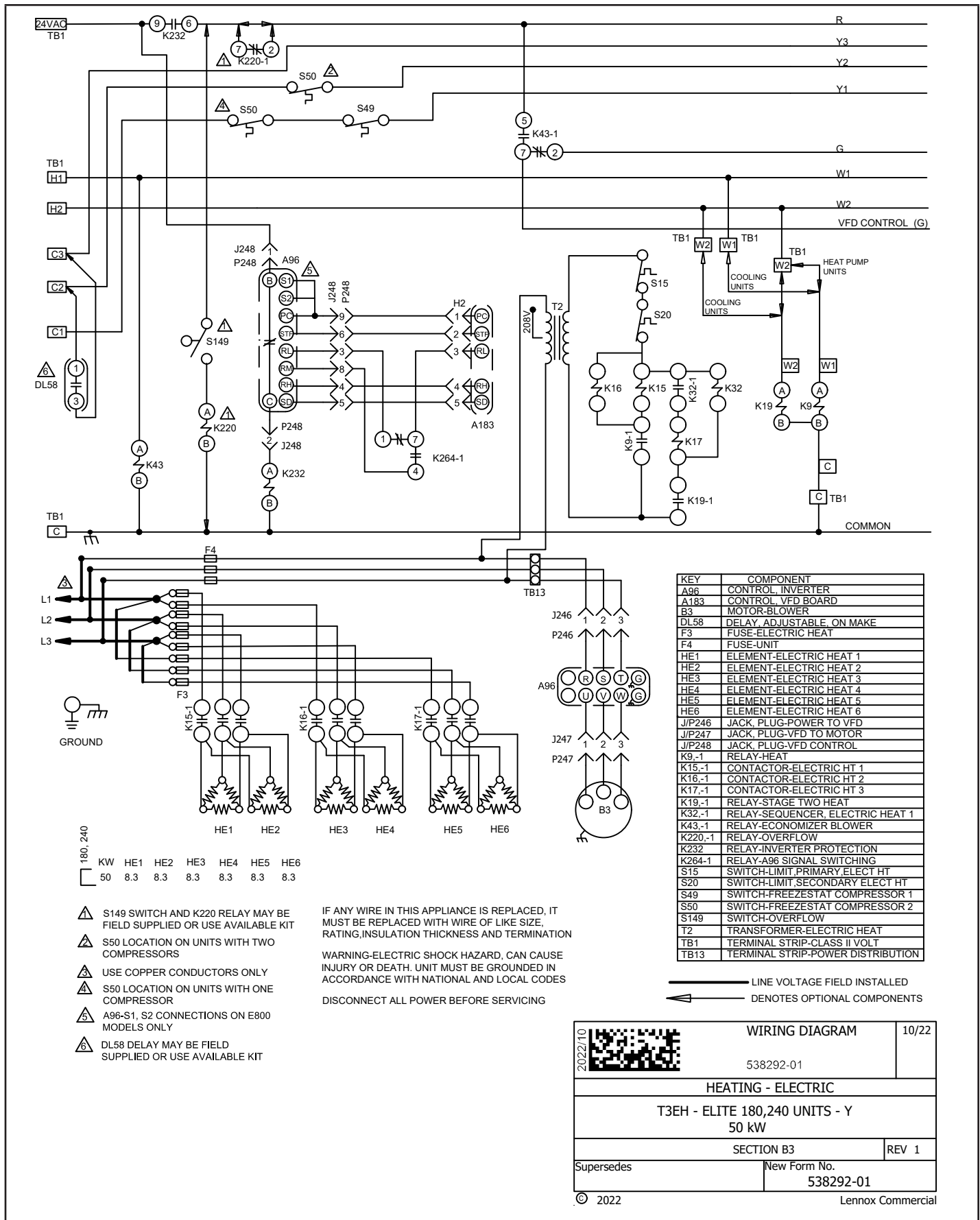


FIGURE 11