UNIT INFORMATION

100136
05/2025

LCT SERIES
13 to 25 ton
45.7 to 88 kW

Service Literature

LCT156 through 300 with R-454B

The LCT156, 180, 210, 240 and 300 units are configure to order units (CTO) with a wide selection of factory installed options.

Cooling capacities range from 13 to 25 tons. LCT 156 utilize two compressors and three condenser fans. LCT 180 utilize three compressors and four condenser fans. LCT 210 utilize four compressors and four condenser fans. LCT 240 & 300 utilize four compressors and six condenser fans.

All LCT units are designed to accept any of several different energy management thermostat control systems with minimum field wiring. Factory- or field-provided control options connect to the unit through Smartwire connectors. When “plugged in” the controls become an integral part of the unit wiring.

Information contained in this manual is intended for use by qualified service technicians only. All specifications 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.

False ceilings or drop ceiling may be used as a return air plenum only if the unit being installed has a Refrigerant Detection System installed.

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

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. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

⚠ 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.

⚠ WARNING

If this appliance is conditioning a space with an area smaller than TA min or stored in a space with an area smaller than A min as defined by this instruction, then that space must be without continuously operating open flames (e.g. an operating gas appliance) or other potential ignition sources (e.g. an operating electric heater or similar hot surface). A flame-producing device may be installed in the same space if the device is provided with an effective flame arrest system.

⚠ WARNING

Auxiliary devices which may be potential ignition sources shall not be installed in the duct work. Examples of potential ignition sources are hot surfaces with a temperature exceeding 700°C and electric switching components.

⚠ 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

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⚠ 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.

⚠ WARNING

Only Manufacturer approved auxiliary devices are permitted to be installed in this unit.

⚠ CAUTION

Any service personnel installing, decommissioning, or performing maintenance on the unit must be properly trained with A2L refrigerants.

⚠ WARNING

Electric shock hazard. Can cause injury or death. Before attempting to perform any service or maintenance, turn the electrical power to unit OFF at disconnect switch(es). Unit may have multiple power supplies.

⚠ 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.

⚠ WARNING

• This appliance must be installed in accordance with local and national wiring regulations.

• If the appliance is not fitted with an option for full disconnection from power, a means of disconnection must be incorporated in the fixed wiring in accordance with national and local wiring regulations.

⚠ CAUTION

The 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

⚠ CAUTION

Children should be supervised not to play with the appliance.

⚠ CAUTION

Servicing shall be performed only as recommended by the manufacturer.

⚠ CAUTION

Leak Detection System installed. Unit must be powered except for service.

⚠ WARNING

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

⚠ 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.

⚠ IMPORTANT

Refrigerant sensors for refrigerant detection systems shall only be replaced with sensors specified by the appliance manufacture.

⚠ CAUTION

This unit is equipped with electrically powered safety measures. To be effective, the unit must be electrically powered at all times after installation, other than when servicing.

A2L Refrigerant Considerations

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. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects, taking into account the effects of aging or continual vibration from sources such as compressors or fans.

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

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 practices be followed since flammability is a consideration. The following procedure shall be adhered to:

-Safely remove refrigerant following local and national regulations.

-Evacuate the circuit.

-Purge the circuit with inert gas.

-Evacuate.

-Purge the circuit with inert gas.

-Open the circuit

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. 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. This process 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.

OPTIONS / ACCESSORIES

Item Description		Order Number	Size 156	180	210	240	300
COOLING SYSTEM							
Condensate Drain Trap	PVC	**22H54**	X	X	X	X	X
	Copper	**76W27**	X	X	X	X	X
Drain Pan Overflow Switch		**21Z07**	OX	OX	OX	OX	OX
BLOWER - SUPPLY AIR							
Blower Option	VAV Variable Air Volume (Without VFD Bypass Control)	Factory	O	O	O	O	O
	MSAV® Multi-Stage Air Volume (With VFD Bypass Control)	Factory	O	O	O	O	O
	MSAV® Multi-Stage Air Volume (Without VFD Bypass Control)	Factory	O	O	O	O	O
Motors	Belt Drive - 3 HP	Factory	O	O	O		
	Belt Drive - 5 HP	Factory	O	O	O	O	O
	Belt Drive - 7.5 HP	Factory		O	O	O	O
	Belt Drive - 10 HP	Factory				O	O
Drive Kits	Kit #1 535-725 rpm	Factory	O	O	O		
See Blower Data Tables for usage and selection	Kit #2 710-965 rpm	Factory	O	O	O		
	Kit #3 685-856 rpm	Factory	O	O	O	O	O
	Kit #4 850-1045 rpm	Factory	O	O	O	O	O
	Kit #5 945-1185 rpm	Factory	O	O	O	O	O
	Kit #6 850-1045 rpm	Factory		O	O	O	O
	Kit #7 945-1185 rpm	Factory		O	O	O	O
	Kit #8 1045-1285 rpm	Factory		O	O	O	O
	Kit #10 1045-1285 rpm	Factory				O	O
	Kit #11 1135-1330 rpm	Factory				O	O
	Blower Belt Auto-Tensioner	**24B80**	X	X	X	X	X
CABINET							
Combination Coil/Hail Guards		**23U69**	OX				
		23U71		OX	OX	OX	OX
Corrosion Protection		Factory	O	O	O	O	O
CONTROLS							
Commercial Controls	LonTalk® Module	**54W27**	OX	OX	OX	OX	OX
	Novar® LSE	Factory	O	O	O	O	O
Dirty Filter Switch		**53W68**	OX	OX	OX	OX	OX
Fresh Air Tempering		**21Z08**	OX	OX	OX	OX	OX
Smoke Detector - Supply or Return (Power board and one sensor)		**22H56**	OX	OX	OX	OX	OX
Smoke Detector - Supply and Return (Power board and two sensors)		**22H57**	OX	OX	OX	OX	OX

NOTE - Order numbers shown are for ordering field installed accessories.

OX - Configure To Order (Factory Installed) or Field Installed

O = Configure To Order (Factory Installed)

X = Field Installed

OPTIONS / ACCESSORIES

Item Description		Order Number	Size 156	180	210	240	300
INDOOR AIR QUALITY							
Air Filters							
Healthy Climate® High Efficiency Air Filters 24 x 24 x 2 (Order 6 per unit)	MERV 8	**54W67**	OX	OX	OX	OX	OX
	MERV 13	**52W40**	OX	OX	OX	OX	OX
	MERV 16	**21U42**	X	X	X	X	X
Replacement Media Filter With Metal Mesh Frame (includes non-pleated filter media)		**44N61**	X	X	X	X	X
Indoor Air Quality (CO_2) Sensors							
Sensor - Wall-mount, off-white plastic cover with LCD display		**77N39**	X	X	X	X	X
Sensor - Wall-mount, off-white plastic cover, no display		**23V86**	X	X	X	X	X
Sensor - Black plastic case, LCD display, rated for plenum mounting		**87N52**	X	X	X	X	X
Sensor - Black plastic case, no display, rated for plenum mounting		**23V87**	X	X	X	X	X
CO_2 Sensor Duct Mounting Kit - for downflow applications		**23Y47**	X	X	X	X	X
Aspiration Box - for duct mounting non-plenum rated CO_2 sensors (**77N39**)		**90N43**	X	X	X	X	X
Needlepoint Bipolar Ionization (NPBI)							
Needlepoint Bipolar Ionization (NPBI) Kit		**21U37**	X	X	X		
		21U38				X	
		21U39					X
UVC Germicidal Light Kit							
[1] Healthy Climate® UVC Light Kit (110/230v-1ph)		**21A94**	X	X	X	X	X
Step-Down Transformers	460V primary, 230V secondary	**10H20**	X	X	X	X	X
	575V primary, 230V secondary	**10H21**	X	X	X	X	X
ELECTRICAL							
Voltage 60 Hz	208/230V - 3 phase	Factory	O	O	O	O	O
	460V - 3 phase	Factory	O	O	O	O	O
	575V - 3 phase	Factory	O	O	O	O	O
HACR Circuit Breakers		Factory	O	O	O	O	O
[2] Short-Circuit Current Rating (SCCR) of 100kA (includes Phase/Voltage Detection)		Factory	O	O	O	O	O
[3] Disconnect Switch (see Disconnect Table for usage, page 21)	80 amp	**54W85**	OX	OX	OX	OX	OX
	[4] 150 amp	**54W86**	OX	OX	OX	OX	OX
	250 amp	**54W87**					OX
GFI Service Outlets	15 amp non-powered, field-wired (208/230V, 460V)	**74M70**	OX	OX	OX	OX	OX
	[4], [5] 15 amp factory-wired and powered (208/230V, 460V)	Factory	O	O	O	O	O
	[6] 20 amp non-powered, field-wired (208/230V, 460V, 575V)	**67E01**	X	X	X	X	X
	[6] 20 amp non-powered, field-wired (575V)	Factory	O	O	O	O	O
Weatherproof Cover for GFI		**10C89**	X	X	X	X	X

[1] Lamps operate on 110-230V single-phase power supply. Step-down transformer may be ordered separately for 460V and 575V units. Alternately, 110V power supply may be used to directly power the UVC ballast(s).

[2] SCCR option is only available with factory installed electric heat or no electric heat.
SCCR option is not available if the MOCP of the configured unit is greater than 200A.

[3] Disconnect Switch is not available with the SCCR option.

[4] If a factory installed disconnect switch is ordered with a factory installed GFI, the default disconnect size is 150 amps.

[5] Unit powered GFI Service Outlets are not available with SCCR option.
Disconnect Switch or Circuit Breaker is required with unit powered GFI Service Outlets.

[6] Canada requires a minimum 20 amp circuit. Select 20 amp, non-powered, field wired GFI.

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OPTIONS / ACCESSORIES

Item Description		Order Number	Size 156	180	210	240	300
ELECTRIC HEAT							
15 kW	208/240V-3ph	**30U62**	OX	OX	OX	OX	OX
	460V-3ph	**30U63**	OX	OX	OX	OX	OX
	575V-3ph	**30U64**	OX	OX	OX	OX	OX
30 kW	208/240V-3ph	**30U65**	OX	OX	OX	OX	OX
	460V-3ph	**30U66**	OX	OX	OX	OX	OX
	575V-3ph	**30U67**	OX	OX	OX	OX	OX
45 kW	208/240V-3ph	**30U71**	OX	OX	OX	OX	OX
	460V-3ph	**30U72**	OX	OX	OX	OX	OX
	575V-3ph	**30U73**	OX	OX	OX	OX	OX
60 kW	208/240V-3ph	**30U77**	OX	OX	OX	OX	OX
	460V-3ph	**30U78**	OX	OX	OX	OX	OX
	575V-3ph	**30U79**	OX	OX	OX	OX	OX
90 kW	208/240V-3ph	**30U83**			OX	OX	OX
	460V-3ph	**30U84**			OX	OX	OX
	575V-3ph	**30U85**			OX	OX	OX
ECONOMIZER							
High Performance Economizer (Approved for California Title 24 Building Standards AMCA Class 1A Certified)							
High Performance Economizer (Downflow or Horizontal) Includes Economizer Dampers with Outdoor Air Hood Downflow Applications - Use furnished Outdoor Air Hood - Order Downflow Barometric Relief Dampers with Exhaust Hood separately Horizontal Applications - Use furnished Outdoor Air Hood - Order Horizontal Barometric Relief Dampers with Exhaust Hood separately		**22J18**	OX	OX	OX	OX	OX
Economizer Controls							
Differential Enthalpy (Not for Title 24)	Order 2	**21Z09**	OX	OX	OX	OX	OX
Sensible Control	Sensor is Furnished	Factory	O	O	O	O	O
Single Enthalpy (Not for Title 24)		**21Z09**	OX	OX	OX	OX	OX
Global Control	Sensor Field Provided	Factory	O	O	O	O	O
Building Pressure Control		**13J77**	X	X	X	X	X
Outdoor Air CFM Control		**13J76**	X	X	X	X	X
Barometric Relief Dampers With Exhaust Hood							
Downflow Barometric Relief Dampers		**54W78**	OX	OX	OX	OX	OX
Horizontal Barometric Relief Dampers		**16K99**	X	X	X	X	X
OUTDOOR AIR							
Outdoor Air Dampers With Outdoor Air Hood							
Motorized		**22J27**	OX	OX	OX	OX	OX
Manual		**13U05**	X	X	X	X	X

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OPTIONS / ACCESSORIES

Item Description		Order Number	Size 156	180	210	240	300
[7] POWER EXHAUST (DOWNFLOW APPLICATIONS ONLY)							
Standard Static, SCCR Rated	208/230V	**22H90**	OX	OX	OX	OX	OX
	460V	**22H91**	OX	OX	OX	OX	OX
	575V	**22V34**	OX	OX	OX	OX	OX
HUMIDITROL® CONDENSER REHEAT OPTION - MSAV® MODELS ONLY							
Humiditrol Dehumidification Option		Factory	O	O	O	O	O
ROOF CURBS							
Hybrid Roof Curbs, Downflow							
8 in. height		**11F58**	X	X	X	X	X
14 in. height		**11F59**	X	X	X	X	X
18 in. height		**11F60**	X	X	X	X	X
24 in. height		**11F61**	X	X	X	X	X
Adjustable Pitch Curb							
14 in. height		**43W26**	X	X	X	X	X
Standard Roof Curbs, Horizontal - Requires Horizontal Return Air Panel Kit							
26 in. height - slab applications		**11T89**	X	X	X	X	
30 in. height - slab applications		**11T90**					X
37 in. height - rooftop applications		**11T96**	X	X	X	X	
41 in. height - rooftop applications		**11T97**					X
Insulation Kit For Standard Horizontal Roof Curbs							
For 26 in. Curb		**73K32**	X	X	X	X	
For 30 in. Curb		**73K33**					X
For 37 in. Curb		**73K34**	X	X	X	X	
For 41 in. Curb		**73K35**					X
Horizontal Return Air Panel Kit							
Required for Horizontal Applications with Roof Curb		**87M00**	X	X	X	X	X
CEILING DIFFUSERS							
Step-Down - Order one	RTD11-185S	**13K63**	X	X			
	RTD11-275S	**13K64**			X	X	X
Flush - Order one	FD11-185S	**13K58**	X	X			
	FD11-275S	**13K59**			X	X	X
Transitions (Supply and Return) - Order one	C1DIFF33C-1	**12X68**	X	X			
	C1DIFF34C-1	**12X70**			X	X	X

[7] Field installed Power Exhaust requires Economizer with Outdoor Air Hood and Downflow Barometric Relief Dampers with Exhaust Hood. Must be ordered separately.

NOTE - Order numbers shown are for ordering field installed accessories.

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X = Field Installed

SPECIFICATIONS — 13 TON

Model			LCT156H5M	LCT156H5V
Nominal Tonnage			13 Ton	13 Ton
Efficiency Type			High	High
Blower Type			MSAV® Multi-Stage Air Volume	VAV Variable Air Volume
Cooling Performance	Gross Cooling Capacity (Btuh)		152,000	152,000
	[1] Net Cooling Capacity (Btuh)		148,000	148,000
	[1] AHRI Rated Air Flow (cfm)		5800	5800
	[1] IEER (Btuh/Watt)		15.6	15.2
	[1] EER (Btuh/Watt)		12.2	12.2
	Total Unit Power (kW)		12.1	12.1
Sound Rating Number	dBA		86	86
Refrigerant	Refrigerant Type		R-454B	R-454B
	Without Reheat Option	Circuit 1	9 lbs. 0 oz.	9 lbs. 0 oz.
		Circuit 2	7 lbs. 10 oz.	7 lbs. 10 oz.
	With Reheat Option	Circuit 1	9 lbs. 0 oz.	- - -
		Circuit 2	7 lbs. 15 oz.	- - -
Electric Heat (kW) Available - See page 16			15, 30, 45, 60 kW	
Compressor Type (number)			Two-Stage Scroll (1), Single-Stage Scroll (1)	
Outdoor Coils	Net face area - ft.² (total)		41.4	41.4
	Rows		1	1
	Fins - in.		23	23
Outdoor Coil Fans	Motor HP (number and type)		1/3 (1 ECM) (2 PSC)	1/3 (1 ECM) (2 PSC)
	Rpm		1075	1075
	Watts (total)		1100	1100
	Diameter (Number) - in.		3 (24)	3 (24)
	Blades		3	3
	Total Air volume - cfm		12,000	12,000
Indoor Coils	Net face area - ft.² (total)		21.4	21.4
	Tube diameter - in.		3/8	3/8
	Rows		3	3
	Fins - in.		14	14
	Condensate drain size (NPT) - in.		(1) 1 in.	(1) 1 in.
	Expansion device type		Balanced Port Thermostatic Expansion Valve,removable power head	
[3] **Indoor Blower and Drive Selection**	Nominal motor HP		3, 5	
	Maximum usable motor HP (US)		3.45, 5.75	
	Drive kit number		3 HP Kit 1 535-725 rpm Kit 2 710-965 rpm 5 HP Kit 3 - 685-856 rpm Kit 4 850-1045 rpm Kit 5 945-1185 rpm	
	Wheel (Number) diameter x width - in.		(2) 15 x 15 in.	(2) 15 x 15 in.
Filters	Type of filter		MERV 4, Disposable	
	Number and size - in.		(6) 24 x 24 x 2	
Line voltage data (Volts-Phase-Hz)			208/230-3-60, 460-3-60, 575-3-60	

NOTE - Net capacity includes evaporator blower motor heat deduction. Gross capacity does not include evaporator blower motor heat deduction.

[1] AHRI Certified to AHRI Standard 340/360; 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

[2] Integrated Energy Efficiency Ratio tested according to AHRI Standard 340/360.

[3] Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished are shown. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

NOTE – All units are limited to a motor service factor of 1.0.

SPECIFICATIONS — 15 TON

			LCT180H5M	LCT180H5V
Model			**LCT180H5M**	**LCT180H5V**
Nominal Tonnage			15 Ton	15 Ton
Efficiency Type			High	High
Blower Type			MSAV® Multi-Stage Air Volume	VAV Variable Air Volume
Cooling Performance	Gross Cooling Capacity (Btuh)		176,000	176,000
	[1] Net Cooling Capacity (Btuh)		172,000	172,000
	[1] AHRI Rated Air Flow (cfm)		5000	5000
	[1] IEER (Btuh/Watt)		15.6	15.2
	[1] EER (Btuh/Watt)		12.2	12.2
	Total Unit Power (kW)		14.1	14.1
Sound Rating Number	dBA		93	93
Refrigerant	Refrigerant Type		R-454B	R-454B
	Without Reheat Option	Circuit 1	5 lbs.14 oz.	5 lbs.14 oz.
		Circuit 2	5 lbs. 8 oz.	5 lbs. 8 oz.
		Circuit 3	5 lbs. 0 oz.	5 lbs. 0 oz.
	With Reheat Option	Circuit 1	6 lbs.7 oz.	- - -
		Circuit 2	6 lbs. 1 oz.	- - -
		Circuit 3	6 lbs. 0 oz.	- - -
Electric Heat (kW) Available - See page 16			15, 30, 45, 60 kW	
Compressor Type (number)			Scroll (3)	Scroll (3)
Outdoor Coils	Net face area - ft.² (total)		55.2	55.2
	Rows		1	1
	Fins - in.		23	23
Outdoor Coil Fans	Motor HP (number and type)		1/3 (2 ECM) (2 PSC)	1/3 (2 ECM) (2 PSC)
	Rpm		1075	1075
	Watts (total)		1500	1500
	Diameter (Number) - in.		(4) 24	(4) 24
	Blades		3	3
	Total Air volume - cfm		16,000	16,000
Indoor Coils	Net face area - ft.² (total)		21.4	21.4
	Tube diameter - in.		3/8	3/8
	Rows		3	3
	Fins - in.		14	14
	Condensate drain size (NPT) - in.		(1) 1 in.	(1) 1 in.
	Expansion device type		Balanced Port Thermostatic Expansion Valve,removable power head	
[3] **Indoor Blower and Drive Selection**	Nominal motor HP		3, 5, 7.5	
	Maximum usable motor HP (US)		3.45, 5.75	
	Drive kit number		3 HP Kit 1 535-725 rpm Kit 2 710-965 rpm 5 HP Kit 3 685-856 rpm Kit 4 850-1045 rpm Kit 5 945-1185 rpm 7.5 HP Kit 6 850-1045 rpm Kit 7 945-1185 rpm Kit 8 1045-1285 rpm	
	Wheel (Number) diameter x width - in.		(2) 15 x 15 in.	(2) 15 x 15 in.
Filters	Type of filter		MERV 4, Disposable	
	Number and size - in.		(6) 24 x 24 x 2	
Line voltage data (Volts-Phase-Hz)			208/230-3-60, 460-3-60, 575-3-60	

NOTE - Net capacity includes evaporator blower motor heat deduction. Gross capacity does not include evaporator blower motor heat deduction.

[1] AHRI Certified to AHRI Standard 340/360; 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

[2] Integrated Energy Efficiency Ratio tested according to AHRI Standard 340/360.

[3] Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished are shown. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

NOTE – All units are limited to a motor service factor of 1.0.

SPECIFICATIONS — 17.5 TON

Model			LCT210H5M	LCT210H5V
Nominal Tonnage			17.5 Ton	17.5 Ton
Efficiency Type			High	High
Blower Type			MSAV® Multi-Stage Air Volume	VAV Variable Air Volume
Cooling Performance	Gross Cooling Capacity (Btuh)		206,000	206,000
	[1] Net Cooling Capacity (Btuh)		200,000	200,000
	[1] AHRI Rated Air Flow (cfm)		6125	6125
	[1] IEER (Btuh/Watt)		16.2	15.7
	[1] EER (Btuh/Watt)		12.2	12.2
	Total Unit Power (kW)		16.4	16.4
Sound Rating Number	dBA		94	94
Refrigerant	Refrigerant Type		R-454B	R-454B
	Without Reheat Option	Circuit 1	5 lbs. 11 oz.	5 lbs. 11 oz.
		Circuit 2	5 lbs. 14 oz.	5 lbs. 14 oz.
		Circuit 3	5 lbs. 3 oz.	5 lbs. 3 oz.
		Circuit 4	5 lbs. 5 oz.	5 lbs. 5 oz.
	With Reheat Option	Circuit 1	6 lbs. 0 oz.	- - -
		Circuit 2	6 lbs. 11 oz.	- - -
		Circuit 3	5 lbs. 4 oz.	- - -
		Circuit 4	5 lbs. 8 oz.	- - -
Electric Heat (kW) Available - See page 16			15, 30, 45, 60, 90 kW	
Compressor Type (number)			Scroll (4)	Scroll (4)
Outdoor Coils	Net face area - ft.² (total)		55.2	55.2
	Rows		1	1
	Fins - in.		23	23
Outdoor Coil Fans	Motor HP (number and type)		1/3 (2 ECM) (2 PSC)	1/3 (2 ECM) (2 PSC)
	Rpm		1075	1075
	Watts (total)		1500	1500
	Diameter (Number) - in.		(4) 24	(4) 24
	Blades		3	3
	Total Air volume - cfm		16,000	16,000
Indoor Coils	Net face area - ft.² (total)		21.4	21.4
	Tube diameter - in.		3/8	3/8
	Rows		4	3
	Fins - in.		14	14
	Condensate drain size (NPT) - in.		(1) 1 in.	(1) 1 in.
	Expansion device type		Balanced Port Thermostatic Expansion Valve,removable power head	
[3] Indoor Blower and Drive Selection	Nominal motor HP		3, 5, 7.5	
	Maximum usable motor HP (US)		3.45, 5.75	
	Drive kit number		3 HP Kit 1 535-725 rpm Kit 2 710-965 rpm 5 HP Kit 3 685-856 rpm Kit 4 850-1045 rpm Kit 5 945-1185 rpm 7.5 HP Kit 6 850-1045 rpm Kit 7 945-1185 rpm Kit 8 1045-1285 rpm	
	Wheel (Number) diameter x width - in.		(2) 15 x 15 in.	(2) 15 x 15 in.
Filters	Type of filter		MERV 4, Disposable	
	Number and size - in.		(6) 24 x 24 x 2	
Line voltage data (Volts-Phase-Hz)			208/230-3-60, 460-3-60, 575-3-60	

NOTE - Net capacity includes evaporator blower motor heat deduction. Gross capacity does not include evaporator blower motor heat deduction.

[1] AHRI Certified to AHRI Standard 340/360; 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

[2] Integrated Energy Efficiency Ratio tested according to AHRI Standard 340/360.

[3] Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished are shown. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

NOTE – All units are limited to a motor service factor of 1.0.

SPECIFICATIONS — 20 TON

			LCT240H5M	LCT240H5V
Model			**LCT240H5M**	**LCT240H5V**
Nominal Tonnage			20 Ton	20 Ton
Efficiency Type			High	High
Blower Type			MSAV® Multi-Stage Air Volume	VAV Variable Air Volume
Cooling Performance	Gross Cooling Capacity (Btuh)		236,000	236,000
	[1] Net Cooling Capacity (Btuh)		228,000	228,000
	[1] AHRI Rated Air Flow (cfm)		6250	6250
	[1] IEER (Btuh/Watt)		15.6	15.4
	[1] EER (Btuh/Watt)		12.2	12.2
	Total Unit Power (kW)		18.7	18.7
Sound Rating Number	dBA		94	94
Refrigerant	Refrigerant Type		R-454B	R-454B
	Without Reheat Option	Circuit 1	6 lbs. 0 oz.	6 lbs. 0 oz.
		Circuit 2	6 lbs. 12 oz.	6 lbs. 12 oz.
		Circuit 3	5 lbs. 0 oz.	5 lbs. 0 oz.
		Circuit 4	5 lbs. 5 oz.	5 lbs. 5 oz.
	With Reheat Option	Circuit 1	6 lbs. 8 oz.	- - -
		Circuit 2	5 lbs. 4 oz.	- - -
		Circuit 3	5 lbs. 4 oz.	- - -
		Circuit 4	5 lbs. 6 oz.	- - -
Electric Heat (kW) Available - See page 16			15, 30, 45, 60, 90 kW	
Compressor Type (number)			Scroll (4)	Scroll (4)
Outdoor Coils	Net face area - ft.² (total)		55.2	55.2
	Rows		1	1
	Fins - in.		23	23
Outdoor Coil Fans	Motor HP (number and type)		1/3 (2 ECM) (4 PSC)	1/3 (2 ECM) (4 PSC)
	Rpm		1075	1075
	Watts (total)		1075 - 1950	1075 - 1950
	Diameter (Number) - in.		(6) 24	(6) 24
	Blades		3	3
	Total Air volume - cfm		20,000	20,000
Indoor Coils	Net face area - ft.² (total)		21.4	21.4
	Tube diameter - in.		3/8	3/8
	Rows		4	4
	Fins - in.		14	14
	Condensate drain size (NPT) - in.		(1) 1 in.	(1) 1 in.
	Expansion device type		Balanced Port Thermostatic Expansion Valve,removable power head	
[3] **Indoor Blower and Drive Selection**	Nominal motor HP		5, 7.5, 10	
	Maximum usable motor HP (US)		5.75, 8.62, 11.5	
	Drive kit number		5 HP Kit 3 685-856 rpm Kit 4 850-1045 rpm Kit 5 945-1185 rpm 7.5 HP Kit 6 850-1045 rpm Kit 7 945-1185 rpm Kit 8 1045-1285 rpm 10 HP Kit 7 945-1185 rpm Kit 10 1045-1285 rpm Kit 11 1135-1330 rpm	
	Wheel (Number) diameter x width - in.		(2) 15 x 15 in.	(2) 15 x 15 in.
Filters	Type of filter		MERV 4, Disposable	
	Number and size - in.		(6) 24 x 24 x 2	
Line voltage data (Volts-Phase-Hz)			208/230-3-60, 460-3-60, 575-3-60	

NOTE - Net capacity includes evaporator blower motor heat deduction. Gross capacity does not include evaporator blower motor heat deduction.

[1] AHRI Certified to AHRI Standard 340/360; 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

[2] Integrated Energy Efficiency Ratio tested according to AHRI Standard 340/360.

[3] Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished are shown. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

NOTE – All units are limited to a motor service factor of 1.0.

SPECIFICATIONS — 25 TON

			LCT300H5M	LCT300H5V
Model			**LCT300H5M**	**LCT300H5V**
Nominal Tonnage			25 Ton	25 Ton
Efficiency Type			High	High
Blower Type			MSAV® Multi-Stage Air Volume	VAV Variable Air Volume
Cooling Performance	Gross Cooling Capacity (Btuh)		281,000	281,000
	[1] Net Cooling Capacity (Btuh)		270,000	270,000
	[1] AHRI Rated Air Flow (cfm)		7500	7500
	[1] IEER (Btuh/Watt)		14.5	14.2
	[1] EER (Btuh/Watt)		10.8	10.8
	Total Unit Power (kW)		25	25
Sound Rating Number	dBA		94	94
Refrigerant	Refrigerant Type		R-454B	R-454B
	Without Reheat Option	Circuit 1	5 lbs. 15 oz.	5 lbs. 15 oz.
		Circuit 2	5 lbs. 7 oz.	5 lbs. 7 oz.
		Circuit 3	5 lbs. 5 oz.	5 lbs. 5 oz.
		Circuit 4	5 lbs. 6 oz.	5 lbs. 6 oz.
	With Reheat Option	Circuit 1	6 lbs. 6 oz.	- - -
		Circuit 2	6 lbs. 2 oz.	- - -
		Circuit 3	5 lbs. 2 oz.	- - -
		Circuit 4	5 lbs. 12 oz.	- - -
Electric Heat (kW) Available - See page 16			15, 30, 45, 60, 90 kW	
Compressor Type (number)			Scroll (4)	Scroll (4)
Outdoor Coils	Net face area - ft.² (total)		55.2	55.2
	Rows		1	1
	Fins - in.		23	23
Outdoor Coil Fans	Motor HP (number and type)		1/3 (2 ECM) (4 PSC)	1/3 (2 ECM) (4 PSC)
	Rpm		1075	1075
	Watts (total)		1075 - 1950	1075 - 1950
	Diameter (Number) - in.		(6) 24	(6) 24
	Blades		3	3
	Total Air volume - cfm		20,000	20,000
Indoor Coils	Net face area - ft.² (total)		21.4	21.4
	Tube diameter - in.		3/8	3/8
	Rows		4	4
	Fins - in.		14	14
	Condensate drain size (NPT) - in.		(1) 1 in.	(1) 1 in.
	Expansion device type		Balanced Port Thermostatic Expansion Valve,removable power head	
[3] **Indoor Blower and Drive Selection**	Nominal motor HP		5, 7.5, 10	
	Maximum usable motor HP (US)		5.75, 8.62, 11.5	
	Drive kit number		5 HP Kit 3 685-856 rpm Kit 4 850-1045 rpm Kit 5 945-1185 rpm 7.5 HP Kit 6 850-1045 rpm Kit 7 945-1185 rpm Kit 8 1045-1285 rpm 10 HP Kit 7 945-1185 rpm Kit 10 1045-1285 rpm Kit 11 1135-1330 rpm	
	Wheel (Number) diameter x width - in.		(2) 15 x 15 in.	(2) 15 x 15 in.
Filters	Type of filter		MERV 4, Disposable	
	Number and size - in.		(6) 24 x 24 x 2	
Line voltage data (Volts-Phase-Hz)			208/230-3-60, 460-3-60, 575-3-60	

NOTE - Net capacity includes evaporator blower motor heat deduction. Gross capacity does not include evaporator blower motor heat deduction.

[1] AHRI Certified to AHRI Standard 340/360; 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

[2] Integrated Energy Efficiency Ratio tested according to AHRI Standard 340/360.

[3] Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished are shown. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

NOTE – All units are limited to a motor service factor of 1.0.

BLOWER DATA

BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY WITH DRY INDOOR COIL & AIR FILTERS IN PLACE

FOR ALL UNITS ADD:

1 - Wet indoor coil air resistance of selected unit.
2 - Any factory installed options air resistance (electric heat, Economizer, etc.)
3 - Any field installed accessories air resistance (electric heat, duct resistance, diffuser, etc.)

Then determine from blower table blower motor output and drive required.
See page 14 for wet coil, option/accessory air resistance data, and factory installed drive kit specifications.
See page 15 for minimum air volume required for use with optional electric heat.

Air Volume cfm	TOTAL STATIC PRESSURE - Inches Water Gauge (Pa)																									
	0.20		0.40		0.60		0.80		1.00		1.20		1.40		1.60		1.80		2.00		2.20		2.40		2.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2750	385	0.30	505	0.50	600	0.70	680	0.90	755	1.10	820	1.30	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3000	395	0.35	515	0.55	610	0.75	685	1.00	760	1.20	825	1.45	885	1.70	---	---	---	---	---	---	---	---	---	---	---	---
3250	405	0.40	520	0.60	615	0.85	695	1.10	765	1.30	830	1.60	890	1.85	950	2.10	---	---	---	---	---	---	---	---	---	---
3500	415	0.45	530	0.70	620	0.95	700	1.20	775	1.45	840	1.70	900	2.00	955	2.25	1005	2.55	---	---	---	---	---	---	---	---
3750	425	0.50	540	0.75	630	1.05	710	1.30	780	1.60	845	1.85	905	2.15	960	2.45	1010	2.70	1060	3.00	1110	3.30	---	---	---	---
4000	435	0.55	545	0.85	635	1.10	715	1.40	785	1.70	850	2.00	910	2.30	965	2.60	1020	2.90	1070	3.25	1115	3.55	1160	3.85	1205	4.15
4250	445	0.60	555	0.90	645	1.25	725	1.55	795	1.85	855	2.15	915	2.45	970	2.80	1025	3.10	1075	3.45	1120	3.75	1165	4.10	1210	4.45
4500	455	0.70	565	1.00	655	1.35	730	1.65	800	2.00	865	2.35	925	2.65	980	3.00	1030	3.30	1080	3.65	1130	4.05	1175	4.35	1215	4.70
4750	470	0.75	575	1.10	660	1.45	740	1.80	810	2.15	870	2.50	930	2.85	985	3.20	1040	3.55	1085	3.90	1135	4.25	1180	4.65	1225	5.00
5000	480	0.85	585	1.25	670	1.60	750	1.95	815	2.30	880	2.70	940	3.05	995	3.40	1045	3.80	1095	4.15	1140	4.50	1185	4.90	1230	5.30
5250	495	0.95	595	1.35	680	1.70	755	2.10	825	2.50	890	2.90	945	3.25	1000	3.65	1050	4.00	1100	4.40	1150	4.80	1195	5.20	1235	5.60
5500	505	1.05	605	1.45	690	1.85	765	2.25	835	2.65	895	3.05	955	3.45	1010	3.85	1060	4.25	1110	4.70	1155	5.10	1200	5.50	1240	5.90
5750	520	1.15	615	1.60	700	2.00	775	2.45	840	2.85	905	3.25	960	3.65	1015	4.10	1065	4.50	1115	4.95	1160	5.35	1205	5.80	1250	6.25
6000	530	1.30	630	1.75	710	2.15	785	2.60	850	3.05	910	3.45	970	3.90	1025	4.35	1075	4.80	1120	5.20	1170	5.65	1215	6.10	1255	6.55
6250	545	1.40	640	1.90	720	2.35	795	2.80	860	3.25	920	3.70	975	4.15	1030	4.60	1080	5.05	1130	5.50	1175	5.95	1220	6.45	1265	6.90
6500	560	1.55	650	2.05	730	2.50	805	3.00	870	3.45	930	3.95	985	4.40	1040	4.85	1090	5.35	1140	5.85	1185	6.30	1225	6.75	1270	7.25
6750	570	1.70	665	2.20	745	2.70	815	3.20	880	3.70	940	4.20	995	4.65	1045	5.10	1095	5.60	1145	6.10	1190	6.60	1235	7.10	1275	7.60
7000	585	1.85	675	2.35	755	2.90	825	3.40	890	3.95	950	4.45	1005	4.95	1055	5.40	1105	5.95	1155	6.45	1200	6.95	1240	7.45	1285	8.00
7250	600	2.00	690	2.60	765	3.10	835	3.65	900	4.15	955	4.65	1015	5.25	1065	5.75	1115	6.25	1160	6.75	1205	7.30	1250	7.85	1290	8.35
7500	615	2.20	700	2.75	775	3.30	845	3.85	910	4.45	965	4.95	1020	5.50	1075	6.05	1125	6.60	1170	7.15	1215	7.65	1260	8.25	1300	8.75
7750	630	2.40	715	3.00	790	3.55	855	4.10	920	4.70	975	5.25	1030	5.80	1080	6.35	1130	6.90	1180	7.50	1225	8.05	1265	8.60	1305	9.15
8000	640	2.55	725	3.20	800	3.80	865	4.35	930	4.95	985	5.50	1040	6.10	1090	6.70	1140	7.25	1185	7.85	1230	8.40	1275	9.00	1315	9.60
8250	655	2.80	740	3.40	810	4.00	880	4.65	940	5.25	995	5.85	1050	6.45	1100	7.05	1150	7.65	1195	8.25	1240	8.85	1280	9.40	1325	10.05
8500	670	3.00	750	3.65	825	4.30	890	4.90	950	5.55	1005	6.15	1060	6.80	1110	7.40	1160	8.05	1205	8.65	1250	9.25	1290	9.85	1330	10.45
8750	685	3.25	765	3.90	835	4.55	900	5.20	960	5.85	1015	6.45	1070	7.15	1120	7.75	1165	8.35	1215	9.05	1255	9.65	1300	10.30	---	---
9000	700	3.50	780	4.20	850	4.85	910	5.50	970	6.15	1025	6.80	1080	7.50	1130	8.15	1175	8.75	1220	9.40	1265	10.10	---	---	---	---
9250	715	3.75	790	4.45	860	5.15	925	5.85	985	6.55	1040	7.20	1090	7.85	1140	8.55	1185	9.20	1230	9.85	1275	10.55	---	---	---	---
9500	730	4.00	805	4.75	875	5.45	935	6.15	995	6.90	1050	7.60	1100	8.25	1150	8.95	1195	9.60	1240	10.30	---	---	---	---	---	---
9750	745	4.30	820	5.05	885	5.75	950	6.55	1005	7.20	1060	7.95	1110	8.65	1160	9.40	1205	10.05	---	---	---	---	---	---	---	---
10,000	760	4.60	835	5.40	900	6.15	960	6.85	1015	7.60	1070	8.35	1120	9.05	1170	9.80	1215	10.50	---	---	---	---	---	---	---	---
10,250	775	4.90	845	5.65	910	6.45	970	7.20	1030	8.00	1080	8.75	1135	9.55	1180	10.25	---	---	---	---	---	---	---	---	---	---
10,500	790	5.20	860	6.00	925	6.85	985	7.65	1040	8.40	1095	9.20	1145	10.00	---	---	---	---	---	---	---	---	---	---	---	---
10,750	805	5.55	875	6.40	940	7.25	1000	8.05	1055	8.85	1105	9.65	1155	10.45	---	---	---	---	---	---	---	---	---	---	---	---
11,000	820	5.90	890	6.80	950	7.60	1010	8.45	1065	9.30	1115	10.05	---	---	---	---	---	---	---	---	---	---	---	---	---	---

BLOWER DATA

FACTORY INSTALLED BELT DRIVE KIT SPECIFICATIONS

Nominal HP	Maximum HP	Drive Kit Number	RPM Range
3	3.45	1	535 - 725
3	3.45	2	710 - 965
5	5.75	3	685 - 856
5	5.75	4	850 - 1045
5	5.75	5	945 - 1185
7.5	8.63	6	850 - 1045
7.5	8.63	7	945 - 1185
7.5	8.63	8	1045 - 1285
10	11.50	7	945 - 1185
10	11.50	10	1045 - 1285
10	11.50	11	1135 - 1330

NOTE - Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished are shown. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

NOTE – All units are limited to a motor service factor of 1.0.

FACTORY INSTALLED OPTIONS/FIELD INSTALLED ACCESSORY AIR RESISTANCE

Air Volume cfm	Wet Indoor Coil		Reheat Coil	Electric Heat	Economizer	Filters			Horizontal Roof Curb	
	156 180	210 240 300							156 thru 240	300
	in. w.g.	in. w.g.	in. w.g.	in. w.g.	in. w.g.	MERV 8	MERV 13	MERV 16	in. w.g.	in. w.g.
2750	.01	.02	.01	- - -	- - -	.01	.03	.06	.03	-
3000	.01	.02	.01	- - -	- - -	.01	.03	.06	.04	-
3250	.01	.03	.01	- - -	- - -	.01	.04	.07	.04	.01
3500	.01	.03	.02	- - -	- - -	.01	.04	.08	.05	.01
3750	.01	.03	.02	- - -	- - -	.01	.04	.08	.05	.01
4000	.02	.04	.02	- - -	- - -	.01	.04	.09	.06	.02
4250	.02	.04	.02	- - -	- - -	.01	.05	.10	.07	.02
4500	.02	.05	.02	- - -	- - -	.01	.05	.10	.07	.02
4750	.02	.05	.02	- - -	- - -	.02	.05	.11	.08	.03
5000	.02	.05	.02	- - -	- - -	.02	.06	.12	.08	.03
5250	.02	.06	.03	- - -	- - -	.02	.06	.12	.09	.04
5500	.02	.07	.03	- - -	- - -	.02	.06	.13	.10	.04
5750	.03	.07	.03	- - -	- - -	.02	.07	.14	.11	.05
6000	.03	.08	.03	.01	- - -	.03	.07	.14	.11	.06
6250	.03	.08	.03	.01	.01	.03	.07	.15	.12	.07
6500	.03	.09	.04	.01	.02	.03	.08	.16	.13	.08
6750	.04	.10	.04	.01	.03	.03	.08	.17	.14	.08
7000	.04	.10	.04	.01	.04	.04	.08	.17	.15	.09
7250	.04	.11	.04	.01	.05	.04	.09	.18	.16	.10
7500	.05	.12	.05	.01	.06	.04	.09	.19	.17	.11
8000	.05	.13	.05	.02	.09	.05	.10	.21	.19	.13
8500	.06	.15	.05	.02	.11	.05	.10	.22	.21	.15
9000	.07	.16	.06	.04	.14	.06	.11	.24	.24	.17
9500	.08	.18	.07	.05	.16	.07	.12	.25	.26	.19
10,000	.08	.20	.07	.06	.19	.07	.12	.27	.29	.21
10,500	.09	.22	.08	.09	.22	.08	.13	.29	.31	.24
11,000	.11	.24	.08	.11	.25	.09	.14	.30	.34	.27

BLOWER DATA

MINIMUM AIR VOLUME REQUIRED FOR USE WITH OPTIONAL ELECTRIC HEAT

Electric Heat kW	Minimum cfm
15	5200
30	5200
45	5200
60	5200
90	6000

POWER EXHAUST FAN PERFORMANCE

Return Air System Static Pressure	Air Volume Exhausted
in. w.g.	cfm
0.00	8630
0.05	8210
0.10	7725
0.15	7110
0.20	6470
0.25	5790
0.30	5060
0.35	4300
0.40	3510
0.45	2690
0.50	1840

CEILING DIFFUSER AIR RESISTANCE - in. w.g.

Air Volume cfm	Step-Down Diffuser						Flush Diffuser	
	RTD11-185S			RTD11-275S			FD11-185S	FD11-275S
	2 Ends Open	1 Side/2 Ends Open	All Ends & Sides Open	2 Ends Open	1 Side/2 Ends Open	All Ends & Sides Open		
5000	.51	.44	.39	- - -	- - -	- - -	.27	- - -
5200	.56	.48	.42	- - -	- - -	- - -	.30	- - -
5400	.61	.52	.45	- - -	- - -	- - -	.33	- - -
5600	.66	.56	.48	- - -	- - -	- - -	.36	- - -
5800	.71	.59	.51	- - -	- - -	- - -	.39	- - -
6000	.76	.63	.55	.36	.31	.27	.42	.29
6200	.80	.68	.59	- - -	- - -	- - -	.46	- - -
6400	.86	.72	.63	- - -	- - -	- - -	.50	- - -
6500	- - -	- - -	- - -	.42	.36	.31	- - -	.34
6600	.92	.77	.67	- - -	- - -	- - -	.54	- - -
6800	.99	.83	.72	- - -	- - -	- - -	.58	- - -
7000	1.03	.87	.76	.49	.41	.36	.62	.40
7200	1.09	.92	.80	- - -	- - -	- - -	.66	- - -
7400	1.15	.97	.84	- - -	- - -	- - -	.70	- - -
7500	- - -	- - -	- - -	.51	.46	.41	- - -	.45
7600	1.20	1.02	.88	- - -	- - -	- - -	.74	- - -
8000	- - -	- - -	- - -	.59	.49	.43	- - -	.50
8500	- - -	- - -	- - -	.69	.58	.50	- - -	.57
9000	- - -	- - -	- - -	.79	.67	.58	- - -	.66
9500	- - -	- - -	- - -	.89	.75	.65	- - -	.74
10,000	- - -	- - -	- - -	1.00	.84	.73	- - -	.81
10,500	- - -	- - -	- - -	1.10	.92	.80	- - -	.89
11,000	- - -	- - -	- - -	1.21	1.01	.88	- - -	.96

CEILING DIFFUSER AIR THROW DATA - ft.

Size	Air Volume cfm	[1] Effective Throw Range - ft.	
		RTD11-185S Step-Down	FD11-185S Flush
156 180	5600	39 - 49	28 - 37
	5800	42 - 51	29 - 38
	6000	44 - 54	40 - 50
	6200	45 - 55	42 - 51
	6400	46 - 55	43 - 52
	6600	47 - 56	45 - 56

Size	Air Volume cfm	[1] Effective Throw Range - ft.	
		RTD11-275S Step-Down	FD11-275S Flush
210 240 300	7200	33 - 38	26 - 35
	7400	35 - 40	28 - 37
	7600	36 - 41	29 - 38
	7800	38 - 43	40 - 50
	8000	39 - 44	42 - 51
	8200	41 - 46	43 - 52
	8400	43 - 49	44 - 54
	8600	44 - 50	46 - 57
	8800	47 - 55	48 - 59

[1] Throw is the horizontal or vertical distance an airstream travels on leaving the outlet or diffuser before the maximum velocity is reduced to 50 ft. per minute. Four sides open.

ELECTRICAL/ELECTRIC HEAT DATA — 13 TON

Model		LCT156H5					
[1] Voltage - 60Hz		208/230V - 3 Ph		460V - 3 Ph		575V - 3 Ph	
Compressor 1 (Non-Inverter)	Rated Load Amps	19.2		9.1		6.2	
	Locked Rotor Amps	162.3		70.8		58.2	
Compressor 2 (Non-Inverter)	Rated Load Amps	22.4		9.1		7.2	
	Locked Rotor Amps	166.2		74.6		54	
Outdoor Fan Motors (3)	Full Load Amps (1 ECM)	2.8		1.4		1.1	
	Full Load Amps (2 Non-ECM)	2.4		1.3		1	
	Total	4.8		2.6		2	
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4		1.3		1	
	Total	4.8		2.6		2	
Service Outlet 115V GFI (amps)		15		15		20	
Indoor Blower Motor	HP	3	5	3	5	3	5
	Full Load Amps	10.6	16.7	4.8	7.6	3.9	6.1
[2] Maximum Overcurrent Protection (MOCP)	Unit Only	80	90	35	40	25	30
	With (2) 0.33 HP Power Exhaust	90	90	40	40	30	30
[3] Minimum Circuit Ampacity (MCA)	Unit Only	66	72	30	33	23	25
	With (2) 0.33 HP Power Exhaust	71	77	32	35	25	27

ELECTRIC HEAT DATA

	Electric Heat Voltage		208	240	208	240	480	480	600	600
[2] Maximum Overcurrent Protection (MOCP)	Unit+ Electric Heat	15 kW	80	80	90	90	35	40	25	30
		30 kW	[4] 100	110	[4] 100	125	60	60	45	45
		45 kW	150	150	[4] 150	175	80	80	60	70
		60 kW	[4] 150	175	[4] 150	175	80	90	70	70
[3] Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat	15 kW	66	66	72	72	30	33	23	26
		30 kW	92	104	100	112	52	55	41	44
		45 kW	131	149	139	157	74	78	60	62
		60 kW	139	158	146	166	79	82	63	66
[2] Maximum Overcurrent Protection (MOCP)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW	90	90	90	90	40	40	30	30
		30 kW	[4] 100	110	[4] 110	125	60	60	45	50
		45 kW	[4] 150	175	[4] 150	175	80	90	70	70
		60 kW	[4] 150	175	175	175	90	90	70	70
[3] Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW	71	71	77	77	32	36	26	29
		30 kW	98	110	106	118	55	58	44	47
		45 kW	137	155	145	163	77	81	62	65
		60 kW	145	164	152	172	82	85	66	68

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

[1] Extremes of operating range are plus and minus 10% of line voltage.

[2] HACR type breaker or fuse.

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

[4] Factory installed circuit breaker not available.

ELECTRICAL/ELECTRIC HEAT DATA — 15 TON

Model		LCT180H5								
[1] Voltage - 60Hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1 (Non-Inverter)	Rated Load Amps	13.1			6.6			4.8		
	Locked Rotor Amps	93			60			41		
Compressor 2 (Non-Inverter)	Rated Load Amps	13.1			6.6			4.8		
	Locked Rotor Amps	93			60			41		
Compressor 3 (Non-Inverter)	Rated Load Amps	13.1			6.6			4.8		
	Locked Rotor Amps	93			60			41		
Outdoor Fan Motors (4)	Full Load Amps (2 ECM)	2.8			1.4			1.1		
	Total	5.6			2.8			2.2		
	Full Load Amps (2 Non-ECM)	2.4			1.3			1		
	Total	4.8			2.6			2		
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4			1.3			1		
	Total	4.8			2.6			2		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	HP	3	5	7.5	3	5	7.5	3	5	7.5
	Full Load Amps	10.6	16.7	24.2	4.8	7.6	11	3.9	6.1	9
[2] Maximum Overcurrent Protection (MOCP)	Unit Only	70	80	100	35	40	45	25	30	35
	With (2) 0.33 HP Power Exhaust	80	90	100	40	40	50	30	30	40
[3] Minimum Circuit Ampacity (MCA)	Unit Only	64	71	80	32	35	39	24	27	30
	With (2) 0.33 HP Power Exhaust	69	76	85	35	38	42	26	29	32

ELECTRIC HEAT DATA

	Electric Heat Voltage		208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
[2] Maximum Overcurrent Protection (MOCP)	Unit+ Electric Heat	**15 kW**	70	70	80	80	100	100	35	40	45	25	30	35
		30 kW	[4] 100	110	[4] 100	125	[4] 110	125	60	60	60	45	45	50
		45 kW	150	150	[4] 150	175	[4] 150	175	80	80	90	60	70	70
		60 kW	[4] 150	175	[4] 150	175	175	175	80	90	90	70	70	70
[3] Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat	**15 kW**	64	64	71	71	80	80	32	35	39	24	27	30
		30 kW	92	104	100	112	109	121	52	55	59	41	44	48
		45 kW	131	149	139	157	148	166	74	78	82	60	62	66
		60 kW	139	158	146	166	156	175	79	82	86	63	66	69
[2] Maximum Overcurrent Protection (MOCP)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	**15 kW**	80	80	90	90	100	100	40	40	50	30	30	40
		30 kW	[4] 100	110	[4] 110	125	[4] 125	150	60	60	70	45	50	50
		45 kW	[4] 150	175	[4] 150	175	175	175	80	90	90	70	70	70
		60 kW	[4] 150	175	175	175	[4] 175	200	90	90	90	70	70	80
[3] Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	**15 kW**	69	69	76	76	85	85	35	38	42	26	29	32
		30 kW	98	110	106	118	115	127	55	58	63	44	47	50
		45 kW	137	155	145	163	154	172	77	81	85	62	65	68
		60 kW	145	164	152	172	162	181	82	85	90	66	68	72

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

[1] Extremes of operating range are plus and minus 10% of line voltage.

[2] HACR type breaker or fuse.

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

[4] Factory installed circuit breaker not available.

ELECTRICAL/ELECTRIC HEAT DATA — 17.5 TON

Model		LCT210H5								
[1] Voltage - 60Hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1 (Non-Inverter)	Rated Load Amps	13.5			6.4			5.1		
	Locked Rotor Amps	120.4			50			41		
Compressor 2 (Non-Inverter)	Rated Load Amps	13.5			6.4			5.1		
	Locked Rotor Amps	120.4			50			41		
Compressor 3 (Non-Inverter)	Rated Load Amps	13.5			6.4			5.1		
	Locked Rotor Amps	120.4			50			41		
Compressor 4 (Non-Inverter)	Rated Load Amps	13.5			6.4			5.1		
	Locked Rotor Amps	120.4			50			41		
Outdoor Fan Motors (4)	Full Load Amps (2 ECM)	2.8			1.4			1.1		
	Total	5.6			2.8			2.2		
	Full Load Amps (2 Non-ECM)	2.4			1.3			1		
	Total	4.8			2.6			2		
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4			1.3			1		
	Total	4.8			2.6			2		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	HP	3	5	7.5	3	5	7.5	3	5	7.5
	Full Load Amps	10.6	16.7	24.2	4.8	7.6	11	3.9	6.1	9
[2] Maximum Overcurrent Protection (MOCP)	Unit Only	90	100	110	40	45	50	30	35	40
	With (2) 0.33 HP Power Exhaust	90	100	110	45	50	50	35	40	45
[3] Minimum Circuit Ampacity (MCA)	Unit Only	79	86	95	38	41	45	30	33	36
	With (2) 0.33 HP Power Exhaust	84	91	100	40	44	48	32	35	38

ELECTRIC HEAT DATA

Electric Heat Voltage			208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
[2] Maximum Overcurrent Protection (MOCP)	Unit+ Electric Heat	**15 kW**	90	90	100	100	110	110	40	45	50	30	35	40
		30 kW	[4] 100	110	[4] 100	125	[4] 110	125	60	60	60	45	45	50
		45 kW	150	150	[4] 150	175	[4] 150	175	80	80	90	60	70	70
		60 kW	[4] 150	175	[4] 150	175	175	175	80	90	90	70	70	70
		90 kW	[4] 225	250	[4] 225	250	[4] 225	250	125	125	125	100	100	100
[3] Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat	**15 kW**	79	79	86	86	95	95	38	41	45	30	33	36
		30 kW	92	104	100	112	109	121	52	55	59	41	44	48
		45 kW	131	149	139	157	148	166	74	78	82	60	62	66
		60 kW	139	158	146	166	156	175	79	82	86	63	66	69
		90 kW	201	230	209	238	218	247	115	118	123	92	95	98
[2] Maximum Overcurrent Protection (MOCP)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	**15 kW**	90	90	100	100	110	110	45	50	50	35	40	45
		30 kW	[4] 100	110	[4] 110	125	[4] 125	150	60	60	70	45	50	50
		45 kW	[4] 150	175	[4] 150	175	175	175	80	90	90	70	70	70
		60 kW	[4] 150	175	175	175	[4] 175	200	90	90	90	70	70	80
		90 kW	[4] 225	250	[4] 225	250	[4] 225	[4] 300	125	125	150	100	100	110
[3] Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	**15 kW**	84	84	91	91	100	100	40	44	48	32	35	38
		30 kW	98	110	106	118	115	127	55	58	63	44	47	50
		45 kW	137	155	145	163	154	172	77	81	85	62	65	68
		60 kW	145	164	152	172	162	181	82	85	90	66	68	72
		90 kW	207	236	215	244	224	253	118	122	126	94	97	101

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

[1] Extremes of operating range are plus and minus 10% of line voltage.

[2] HACR type breaker or fuse.

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

[4] Factory installed circuit breaker not available.

ELECTRICAL/ELECTRIC HEAT DATA — 20 TON

Model		LCT240H5								
[1] Voltage - 60Hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1 (Non-Inverter)	Rated Load Amps	13.1			6.6			4.8		
	Locked Rotor Amps	93			60			41		
Compressor 2 (Non-Inverter)	Rated Load Amps	13.1			6.6			4.8		
	Locked Rotor Amps	93			60			41		
Compressor 3 (Non-Inverter)	Rated Load Amps	13.1			6.6			4.8		
	Locked Rotor Amps	93			60			41		
Compressor 4 (Non-Inverter)	Rated Load Amps	13.1			6.6			4.8		
	Locked Rotor Amps	93			60			41		
Outdoor Fan Motors (6)	Full Load Amps (2 ECM)	2.8			1.4			1.1		
	Total	5.6			2.8			2.2		
	Full Load Amps (4 Non-ECM)	2.4			1.3			1		
	Total	9.6			5.2			4		
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4			1.3			1		
	Total	4.8			2.6			2		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	HP	5	7.5	10	5	7.5	10	5	7.5	10
	Full Load Amps	16.7	24.2	30.8	7.6	11	14	6.1	9	11
[2] Maximum Overcurrent Protection (MOCP)	Unit Only	100	110	125	50	50	60	35	45	50
	With (2) 0.33 HP Power Exhaust	100	125	125	50	60	60	40	45	50
[3] Minimum Circuit Ampacity (MCA)	Unit Only	89	98	107	44	49	52	34	37	40
	With (2) 0.33 HP Power Exhaust	94	103	111	47	51	55	36	39	42

ELECTRIC HEAT DATA

	Electric Heat Voltage		208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
[2] Maximum Overcurrent Protection (MOCP)	Unit+ Electric Heat	**15 kW**	100	100	110	110	125	125	50	50	60	35	45	50
		30 kW	[4]100	125	[4]110	125	[4]125	150	60	60	70	45	50	50
		45 kW	[4]150	175	[4]150	175	175	175	80	90	90	70	70	70
		60 kW	[4]150	175	175	175	[4]175	200	90	90	90	70	70	80
		90 kW	[4]225	250	[4]225	250	[4]250	[4]300	125	125	150	100	100	110
[3] Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat	**15 kW**	89	89	98	98	107	107	44	49	52	34	37	40
		30 kW	100	112	109	121	117	129	55	59	63	44	48	50
		45 kW	139	157	148	166	156	174	78	82	86	62	66	68
		60 kW	146	166	156	175	164	183	82	86	90	66	69	72
		90 kW	209	238	218	247	227	256	118	123	126	95	98	101
[2] Maximum Overcurrent Protection (MOCP)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	**15 kW**	100	100	125	125	125	125	50	60	60	40	45	50
		30 kW	[4]110	125	[4]125	150	[4]125	150	60	70	70	50	50	60
		45 kW	[4]150	175	175	175	[4]175	200	90	90	90	70	70	80
		60 kW	175	175	[4]175	200	[4]175	200	90	90	100	70	80	80
		90 kW	[4]225	250	[4]225	[4]300	[4]250	[4]300	125	150	150	100	110	110
[3] Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	**15 kW**	94	94	103	103	111	111	47	51	55	36	39	42
		30 kW	106	118	115	127	123	135	58	63	66	47	50	53
		45 kW	145	163	154	172	162	180	81	85	89	65	68	71
		60 kW	152	172	162	181	170	189	85	90	93	68	72	74
		90 kW	215	244	224	253	233	262	122	126	130	97	101	103

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

[1] Extremes of operating range are plus and minus 10% of line voltage.

[2] HACR type breaker or fuse.

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

[4] Factory installed circuit breaker not available.

ELECTRICAL/ELECTRIC HEAT DATA — 25 TON

Model		LCT300H5								
[1] Voltage - 60Hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1 (Non-Inverter)	Rated Load Amps	21.2			9.1			7.7		
	Locked Rotor Amps	156.5			74.8			47.8		
Compressor 2 (Non-Inverter)	Rated Load Amps	21.2			9.1			7.7		
	Locked Rotor Amps	156.5			74.8			47.8		
Compressor 3 (Non-Inverter)	Rated Load Amps	22.4			9.1			7.2		
	Locked Rotor Amps	166.2			74.6			54		
Compressor 4 (Non-Inverter)	Rated Load Amps	22.4			9.1			7.2		
	Locked Rotor Amps	166.2			74.6			54		
Outdoor Fan Motors (6)	Full Load Amps (2 ECM)	2.8			1.4			1.1		
	Total	5.6			2.8			2.2		
	Full Load Amps (4 Non-ECM)	2.4			1.3			1		
	Total	9.6			5.2			4		
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4			1.3			1		
	Total	4.8			2.6			2		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	HP	5	7.5	10	5	7.5	10	5	7.5	10
	Full Load Amps	16.7	24.2	30.8	7.6	11	14	6.1	9	11
[2] Maximum Overcurrent Protection (MOCP)	Unit Only	125	150	150	60	60	70	50	50	60
	With (2) 0.33 HP Power Exhaust	150	150	175	60	70	70	50	50	60
[3] Minimum Circuit Ampacity (MCA)	Unit Only	125	133	141	55	59	62	45	48	50
	With (2) 0.33 HP Power Exhaust	130	138	146	57	61	65	47	50	52

ELECTRIC HEAT DATA

	Electric Heat Voltage		208	240	208	240	208	240	480	480	480	600	600	600
[2] Maximum Overcurrent Protection (MOCP)	Unit+ Electric Heat	**15 kW**	125	125	150	150	150	150	60	60	70	50	50	60
		30 kW	125	125	150	150	150	150	60	60	70	50	50	60
		45 kW	[4] 150	175	[4] 150	175	175	175	80	90	90	70	70	70
		60 kW	[4] 150	175	175	175	[4] 175	200	90	90	90	70	70	80
		90 kW	[4] 225	250	[4] 225	250	[4] 250	[4] 300	125	125	150	100	100	110
[3] Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat	**15 kW**	125	125	133	133	141	141	55	59	62	45	48	50
		30 kW	125	125	133	133	141	141	55	59	63	45	48	50
		45 kW	139	157	148	166	156	174	78	82	86	62	66	68
		60 kW	146	166	156	175	164	183	82	86	90	66	69	72
		90 kW	209	238	218	247	227	256	118	123	126	95	98	101
[2] Maximum Overcurrent Protection (MOCP)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	**15 kW**	150	150	150	150	175	175	60	70	70	50	50	60
		30 kW	150	150	150	150	175	175	60	70	70	50	50	60
		45 kW	[4] 150	175	175	175	[4] 175	200	90	90	90	70	70	80
		60 kW	175	175	[4] 175	200	[4] 175	200	90	90	100	70	80	80
		90 kW	[4] 225	250	[4] 225	[4] 300	[4] 250	[4] 300	125	150	150	100	110	110
[3] Minimum Circuit Ampacity (MCA)	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	**15 kW**	130	130	138	138	146	146	57	61	65	47	50	52
		30 kW	130	130	138	138	146	146	58	63	66	47	50	53
		45 kW	145	163	154	172	162	180	81	85	89	65	68	71
		60 kW	152	172	162	181	170	189	85	90	93	68	72	74
		90 kW	215	244	224	253	233	262	122	126	130	97	101	103

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

[1] Extremes of operating range are plus and minus 10% of line voltage.

[2] HACR type breaker or fuse.

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

[4] Factory installed circuit breaker not available.

ELECTRICAL ACCESSORIES - DISCONNECTS

13 TON | LCT156H5

Motor HP	3		5		3	5	3	5
Electric Heat Voltage	208V	240V	208V	240V	480V		600V	
Unit Only	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust	54W85	54W85	54W86	54W86	54W85	54W85	54W85	54W85
+ Electric Heat 15 kW	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 30 kW	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85
+ Electric Heat 45 kW	54W87	54W86	54W87	54W86	54W85	54W85	54W85	54W85
+ Electric Heat 60 kW	54W87	54W87	54W87	54W87	54W86	54W86	54W85	54W85
+ Power Exhaust + Elec. Heat 15 kW	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 30 kW	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 45 kW	54W87	54W86	54W87	54W86	54W85	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 60 kW	54W87	54W87	54W87	54W87	54W86	54W86	54W85	54W85

15 TON | LCT180H5

Motor HP	3		5		7.5		3	5	7.5	3	5	7.5
Electric Heat Voltage	208V	240V	208V	240V	208V	240V	480V			600V		
Unit Only	54W85	54W85	54W85	54W85	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust	54W85	54W85	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 15 kW	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 45 kW	54W87	54W86	54W87	54W86	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 15 kW	54W85	54W85	54W85	54W85	54W86	54W85	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 45 kW	54W87	54W86	54W87	54W86	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85

17.5 TON | LCT210H5

Motor HP	3		5		7.5		3	5	7.5	3	5	7.5
Electric Heat Voltage	208V	240V	208V	240V	208V	240V	480V			600V		
Unit Only	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 15 kW	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 45 kW	54W87	54W86	54W87	54W86	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W86	54W85	54W85
+ Electric Heat 90 kW	[1] NA	[1] NA	[1] NA	[1] NA	[1] NA	[1] NA	54W86	54W86	54W86	54W86	54W86	54W86
+ Power Exhaust + Elec. Heat 15 kW	54W85	54W85	54W85	54W85	54W86	54W85	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 45 kW	54W87	54W86	54W87	54W86	54W87	54W87	54W86	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W86	54W85	54W85
+ Power Exhaust + Elec. Heat 90 kW	[1] NA	[1] NA	[1] NA	[1] NA	[1] NA	[1] NA	54W86	54W86	54W86	54W86	54W86	54W86

Disconnects - 54W85 - 80A
54W86 - 150A
54W87 - 250A

[1] Disconnect must be field furnished.

ELECTRICAL ACCESSORIES - DISCONNECTS

20 TON | LCT240H5

Motor HP	5		7.5		10		5	7.5	10	5	7.5	10
Electric Heat Voltage	208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
Unit Only	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 15 kW	54W85	54W85	54W85	54W85	54W86	54W85	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 45 kW	54W87	54W86	54W87	54W87	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85
+ Electric Heat 90 kW	[1] NA	[1] NA	[1] NA	[1] NA	[1] NA	[1] NA	54W86	54W86	54W86	54W86	54W86	54W86
+ Power Exhaust + Elec. Heat 15 kW	54W85	54W85	54W86	54W85	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 45 kW	54W87	54W86	54W87	54W87	54W87	54W87	54W85	54W85	54W86	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W86
+ Power Exhaust + Elec. Heat 90 kW	[1] NA	[1] NA	[1] NA	[1] NA	[1] NA	[1] NA	54W86	54W86	54W86	54W86	54W86	54W86

25 TON | LCT300H5

Motor HP	5		7.5		10		5	7.5	10	5	7.5	10
Electric Heat Voltage	208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
Unit Only	54W86	54W86	54W86	54W86	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust	54W86	54W86	54W87	54W87	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 15 kW	54W85	54W85	54W85	54W85	54W86	54W85	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 45 kW	54W87	54W86	54W87	54W87	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85
+ Electric Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85
+ Electric Heat 90 kW	[1] NA	[1] NA	[1] NA	[1] NA	[1] NA	[1] NA	54W86	54W86	54W86	54W86	54W86	54W86
+ Power Exhaust + Elec. Heat 15 kW	54W85	54W85	54W86	54W85	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 45 kW	54W87	54W86	54W87	54W87	54W87	54W87	54W85	54W85	54W86	54W85	54W85	54W85
+ Power Exhaust + Elec. Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W86
+ Power Exhaust + Elec. Heat 90 kW	[1] NA	[1] NA	[1] NA	[1] NA	[1] NA	[1] NA	54W86	54W86	54W86	54W86	54W86	54W86

Disconnects - 54W85 - 80A
54W86 - 150A
54W87 - 250A

[1] Disconnect must be field furnished.

FIELD WIRING NOTES

- For use with copper wiring only
- Field wiring not furnished
- All wiring must conform to NEC or CEC and local electrical codes
- For specific wiring information, please refer to the installation instructions

ELECTRIC HEAT CAPACITIES

Volts Input	15 kW			30 kW			45 kW			60 kW			90 kW		
	kW Input	Btuh Output	Stages	kW Input	Btuh Output	Stages	kW Input	Btuh Output	Stages	kW Input	Btuh Output	Stages	kW Input	Btuh Output	Stages
208	11.3	38,600	1	22.5	76,800	1	33.8	115,300	2	45.0	153,600	2	67.6	230,700	2
220	12.6	43,000	1	25.2	86,000	1	37.8	129,000	2	50.4	172,000	2	75.6	258,000	2
230	13.8	47,100	1	27.5	93,900	1	41.3	141,000	2	55.1	188,000	2	82.7	282,200	2
240	15.0	51,200	1	30.0	102,400	1	45.0	153,600	2	60.0	204,800	2	90.0	307,100	2
440	12.6	43,000	1	25.2	86,000	1	37.8	129,000	2	50.4	172,000	2	75.6	258,000	2
460	13.8	47,100	1	27.5	93,900	1	41.3	141,000	2	55.1	188,000	2	82.7	282,200	2
480	15.0	51,200	1	30.0	102,400	1	45.0	153,600	2	60.0	204,800	2	90.0	307,100	2
550	12.6	43,000	1	25.2	86,000	1	37.8	129,000	2	50.4	172,000	2	75.6	258,000	2
575	13.8	47,100	1	27.5	93,900	1	41.3	141,000	2	55.1	188,000	2	82.7	282,200	2
600	15.0	51,200	1	30.0	102,400	1	45.0	153,600	2	60.0	204,800	2	90.0	307,100	2

Minimum R454B Space and CFM Requirements

Minimum Airflow[1]		
Unit	Q_{min}(CFM)	Q_{min}(m^3h)
LGT/LCT156	238	404
LGT/LCT180	156	265
LGT/LCT210	155	264
LGT/LCT240	178	303
LGT/LCT300	157	267
LGT/LCT156 W/ Humidtrol	238	404
LGT/LCT180 W/ Humidtrol	170	289
LGT/LCT210 W/ Humidtrol	177	300
LGT/LCT240 W/ Humidtrol	172	292
LGT/LCT300 W/ Humidtrol	169	286

*[1] **NOTE -** The minimum airflow is the lowest CFM allowed during venting operation (leak mitigation).*

Minimum Room Area of Conditioned Space[2]		
Unit	TA_{min}(ft^2)	TA_{min}(m^2)
LGT/LCT156	132	12.25
LGT/LCT180	87	8.03
LGT/LCT210	87	8.00
LGT/LCT240	99	9.19
LGT/LCT300	88	8.08
LGT/LCT156 W/ Humidtrol	132	12.25
LGT/LCT180 W/ Humidtrol	95	8.76
LGT/LCT210 W/ Humidtrol	99	9.10
LGT/LCT240 W/ Humidtrol	96	8.85
LGT/LCT300 W/ Humidtrol	94	8.68

*[2] **NOTE -** The minimum room area of conditioned space is the smallest area the unit can service.*

Refrigerant Charge R-454B		
Unit	M_c(lbs)	M_c(kg)
LGT/LCT156 STG 1	9.00	4.08
LGT/LCT156 STG 2	7.63	3.46
LGT/LCT180 STG 1	5.90	2.68
LGT/LCT180 STG 2	5.50	2.49
LGT/LCT180 STG 3	5.00	2.27
LGT/LCT210 STG 1	5.69	2.58
LGT/LCT210 STG 2	5.88	2.66
LGT/LCT210 STG 3	5.19	2.35
LGT/LCT210 STG 4	5.31	2.41
LGT/LCT240 STG 1	6.00	2.72
LGT/LCT240 STG 2	6.75	3.06
LGT/LCT240 STG 3	5.00	2.27
LGT/LCT240 STG 4	5.31	2.41
LGT/LCT300 STG 1	5.94	2.69
LGT/LCT300 STG 2	5.46	2.48
LGT/LCT300 STG 3	5.34	2.42
LGT/LCT300 STG 4	5.38	2.44
LGT/LCT156 STG 1 W/ Humidtrol	9.00	4.08
LGT/LCT156 STG 2 W/ Humidtrol	7.94	3.60
LGT/LCT180 STG 1 W/ Humidtrol	6.44	2.92
LGT/LCT180 STG 2 W/ Humidtrol	6.03	2.74
LGT/LCT180 STG 3 W/ Humidtrol	6.00	2.72
LGT/LCT210 STG 1 W/ Humidtrol	6.00	2.72
LGT/LCT210 STG 2 W/ Humidtrol	6.69	3.03
LGT/LCT210 STG 3 W/ Humidtrol	5.25	2.38
LGT/LCT210 STG 4 W/ Humidtrol	5.00	2.27
LGT/LCT240 STG 1 W/ Humidtrol	6.50	2.95
LGT/LCT240 STG 2 W/ Humidtrol	6.50	2.95
LGT/LCT240 STG 3 W/ Humidtrol	5.00	2.27
LGT/LCT240 STG 4 W/ Humidtrol	5.00	2.27
LGT/LCT300 STG 1 W/ Humidtrol	6.38	2.89
LGT/LCT300 STG 2 W/ Humidtrol	6.13	2.78
LGT/LCT300 STG 3 W/ Humidtrol	5.13	2.32
LGT/LCT300 STG 4 W/ Humidtrol	5.75	2.61

Altitude Adjustment Factor[3]									
Halt	0	200	400	600	800	1000	1200	1400	1600
AF	1	1	1	1	1.02	1.05	1.04	1.1	1.12
Halt	1600	1800	2000	2200	2400	2600	2800	3000	3200
AF	1.12	1.15	1.18	1.21	1.25	1.28	1.32	1.36	1.4

*[3] **NOTE -** Use the Altitude Adjustment Factor to adjust the values in the tables above to different altitudes. Find the relevant altitude above sea level in the two "Halt" rows and then multiply the value needed from the tables above by the altitude factor number. Example: For the minimum airflow in CFM for an LGT/LCT156 at 1000 ft. above see level, multiply 238 by 1.05 to get 249.9 CFM as the new Q_{min}.*

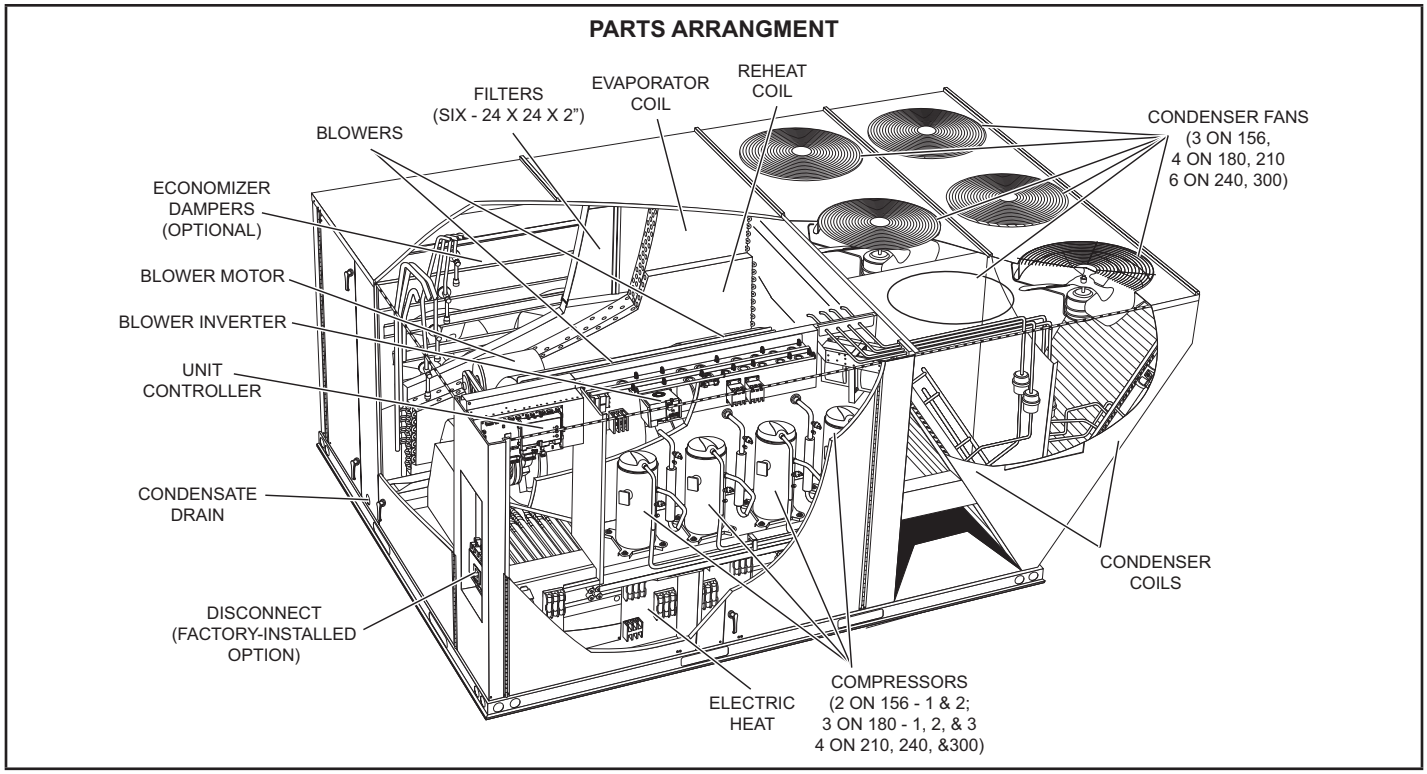


FIGURE 1

I-UNIT COMPONENTS

All 13 through 25 ton (45.7 through 88 kW) units are configure to order units (CTO). Unit components are shown in figures 1. All units come standard with hinged unit panels. The unit panels may be held open with the door rod located inside the unit. All L1, L2 and L3 wiring is color coded; L1 is red, L2 is yellow and L3 is blue.

⚠ 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.

ELECTROSTATIC DISCHARGE (ESD)
Precautions and Procedures

⚠ CAUTION

Electrostatic discharge can affect electronic components. Take precautions to neutralize electrostatic charge by touching your hand and tools to metal prior to handling the control.

A-Control Box Components

Control box components are shown in FIGURE 3 and FIGURE 4. The control box is located in the upper portion of the compressor compartment.

1-Disconnect Switch S48

Units with higher SCCR rating may be equipped with an disconnect switch S48. Other factory or field installed optional circuit breakers may be used, such as CB10. S48 and CB10 are toggle or twist-style switches, which can be used by the service technician to disconnect power to the unit.

2-Control Transformer T1

All use a single line voltage to 24VAC transformer mounted in the control box. Transformer supplies power to control circuits in the unit. The transformer is rated at 70VA and is protected by a 3.5 amp circuit breaker (CB8). The 208/230 (Y) voltage transformers use two primary voltage taps as shown in FIGURE 2, while 460 (G) and 575 (J) voltage transformers use a single primary voltage tap.

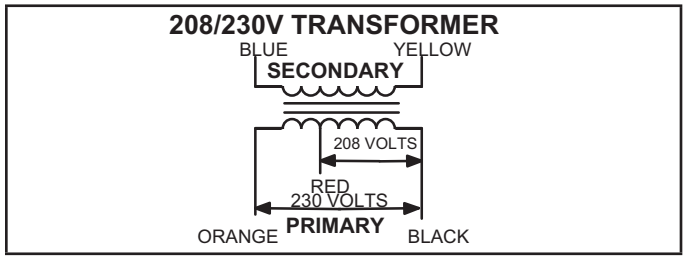


FIGURE 2

3-Contactor Transformer T18

T18 is a single line voltage to 24VAC transformer used in all LCT 13 to 25 ton units. Transformer T18 is protected by a 3.5 amp circuit breaker (CB18). T18 is identical to transformer T1. The transformer supplies 24VAC power to he contactors.

Components Arrangement

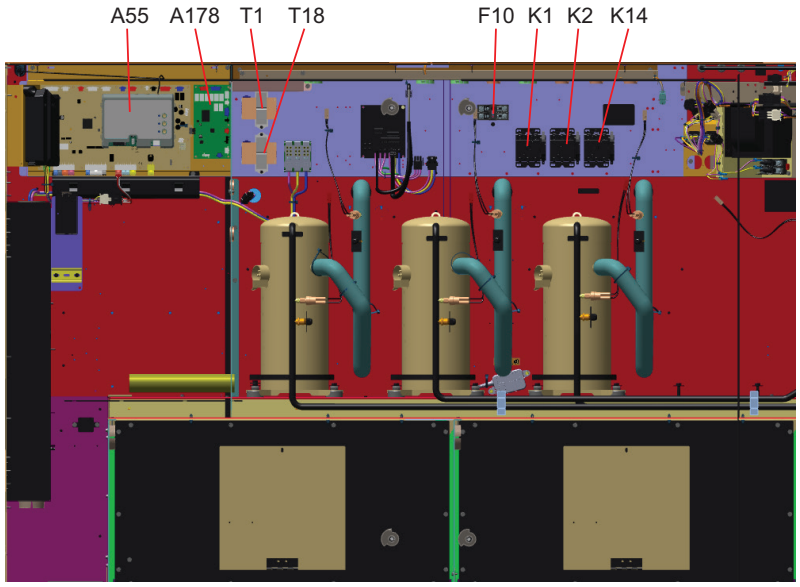


FIGURE 3

Components Arrangement

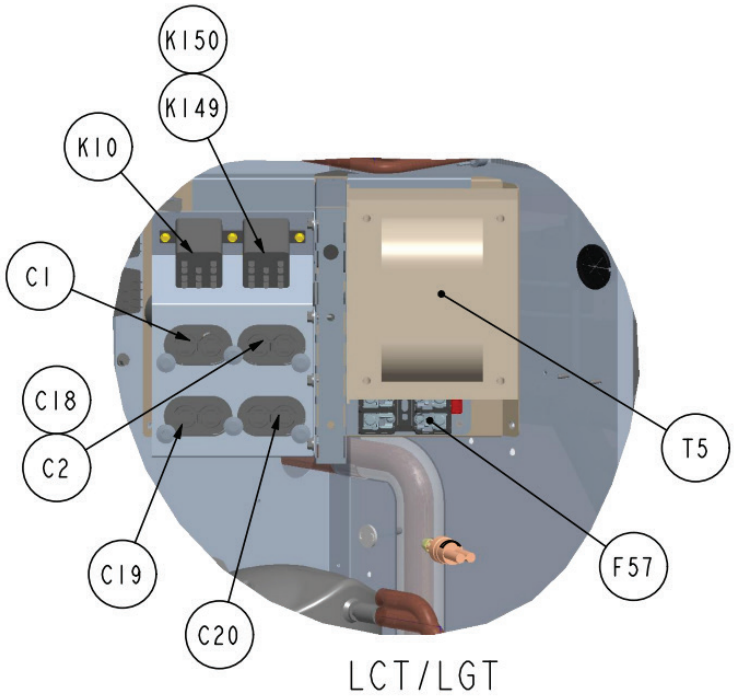


FIGURE 4

4-Terminal Block TB13

TB13 terminal block distributes line voltage power to the line voltage items in the unit.

5-Outdoor Fan Motor Fuse Block & Fuses

F10 Power Exhaust Fan Motor Fuse Block and Fuses F6. STD SCCR 240V, 300V and higher rated SCCR units have three line voltage fuses F10 provide overcurrent protection to all condenser fans. Two line voltage fuses F6 provide overcurrent protection to the two optional power exhaust fans. The fuses are rated at 30A in all 208/230V units but 10A in the 208/230V 240U and 300U models.

6-Compressor Contactor K1, K2, K14, K146

K1, K2: All units

K14: 180, 210, 240, 300 units

K146: 210, 240, 300 units

All compressor contactors are three-pole-double-break contactors with 24VAC coils. In 156 units, K1 (energized by A55) energizes compressors B1 in response to first stage cool demand, and K2 (energized by A55) energizes B2 in response to second stage cool demand. In the 180 units, K1 and K2 (energized by A55) energizes compressors B1 and B2 in response to first stage cool demand, and K14 (energized by A178) energizes B13 in response to second stage cool demand. In 210, 240 and 300 units K14 and K146 (energized by A178) energize compressors B13 and B20 in response to second stage cool demand.

7-Blower Contactor K3

Blower contactor K3, used in all units, is a three-pole-double-break contactor with a 24VAC coil used to energize the indoor blower motor B3 in response to blower demand. K3 is energized by Unit Controller (A55). Optional Staged-Blower units which are not equipped with a bypass option will not have a K3.

8-Ultraviolet Germicidal Lamp (UVC)

Transformer T49

UVC transformer T49 is used in 460V and 575V units which are equipped with a UVC. The auto voltage to 230VAC transformer is installed in the control box. The transformer has an output rating of 0.5 amps. T49 transformer supplies 230VAC power to the UVC lamp.

9-Power Exhaust Relay K65 & K231 (PED units) Power exhaust relays K65 and K231 are N.O. DPDT relays with a 24VAC coil. The relay are used in units equipped with the optional power exhaust dampers. K65 and K231 are energized by the A55 Unit Controller, after the economizer dampers reach 50% open (adjustable in ECTO). When K65 closes, exhaust fan B10 is energized and when K231 closes B11 is energized.

10-Variable Frequency Drive A96 (optional)

Staged-Blower 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, ventilation demand, or smoke alarm. The amount of airflow for each stage is preset from the factory. Airflow can be adjusted by changing ECTO parameters in the A55 Unit Controller. The VFD is located below the Unit Controller.

11-VFD Power To Motor Contactor K202 (optional)

Contactor is used in Staged-Blower units equipped with a VFD bypass option. The three pole 40 amp contactor with a 24VAC coil is energized by the A55 Unit Controller. K202 allows power from the VFD to the B3 blower motor in response to blower demand.

12-Inverter Start Forward Rotation Relay K203 (optional)

Relay is used in optional Staged-Blower units and is a three-pole double-throw relay with a 24VAC coil. K203 is energized by the A55 Unit Controller and provides input to the A96 VFD to start blower forward rotation. K203 also de-energizes K3 allowing A96 to control B3 blower.

13-Unit Controller A55

The Unit Controller provides all unit control functions, unit status information, unit diagnostics, programmable parameters and USB verification and profile sharing. Refer to the Unit Controller guide provided with the unit. Thermostat wires are connected to J297 on the Unit Controller.

14-Compressor 3 & 4 Controller

The compressor 3 & 4 control module A178 controls two additional compressor stages. A178 includes all inputs and outputs required for compressor and fan control, compressor stage diagnostics and low ambient control.

The M3 unit controller is only compatible with L-Connection sensors provided with the unit or purchased separately as specified in the Product Specification. TABLE 4, TABLE 7, TABLE 8 and TABLE 9 show thermistor and pressure transducer readings.

15-Temperature Sensors

Temperature thermistor sensors (RT46-53) are located on specific points for each refrigeration circuit. Temperature thermistors provide continuous temperature input to the unit controller for proper cooling operation as well as system protection. Controller logic will de-energize compressors for each refrigeration circuit when evaporator coil temperature falls below 32°F (0°C) to prevent evaporator freeze-up.

Each thermistor must be specifically placed for proper unit operation and to initiate valid alarms. See TABLE 1 through TABLE 3 for proper locations.

The return air (RT16) and discharge air (RT6) duct probes and the outdoor air (RT17) are all two wire thermistors. See TABLE 4 for resistance vs. temperature.

TABLE 1 LGT/LCT156			
Cat. No.	**Ass'y. No.**	**Sensor Yellow, Blue**	**Figure**
22J06	623049-01	RT46, 47	FIGURE 5
23V50	623049-05	RT48, 49	FIGURE 6

TABLE 2 LGT/LCT180			
Cat. No.	**Ass'y. No.**	**Sensor Yellow, Blue, Red**	**Figure**
22J06	623049-01	RT46, 47, 50	FIGURE 7
23V50	623049-05	RT48, 49, 52	FIGURE 8

TABLE 3 LGT/LCT210, 240, 300			
Cat. No.	**Ass'y. No.**	**Sensor Yel, Blu, Red, Grn**	**Figure**
22J06	623049-01	RT46, 47, 50, 51	FIGURE 9
23V50	623049-05	RT48, 49, 52, 53	FIGURE 10

LGT/LCT56
EVAPORATOR / INDOOR COIL
(RT46, 47)

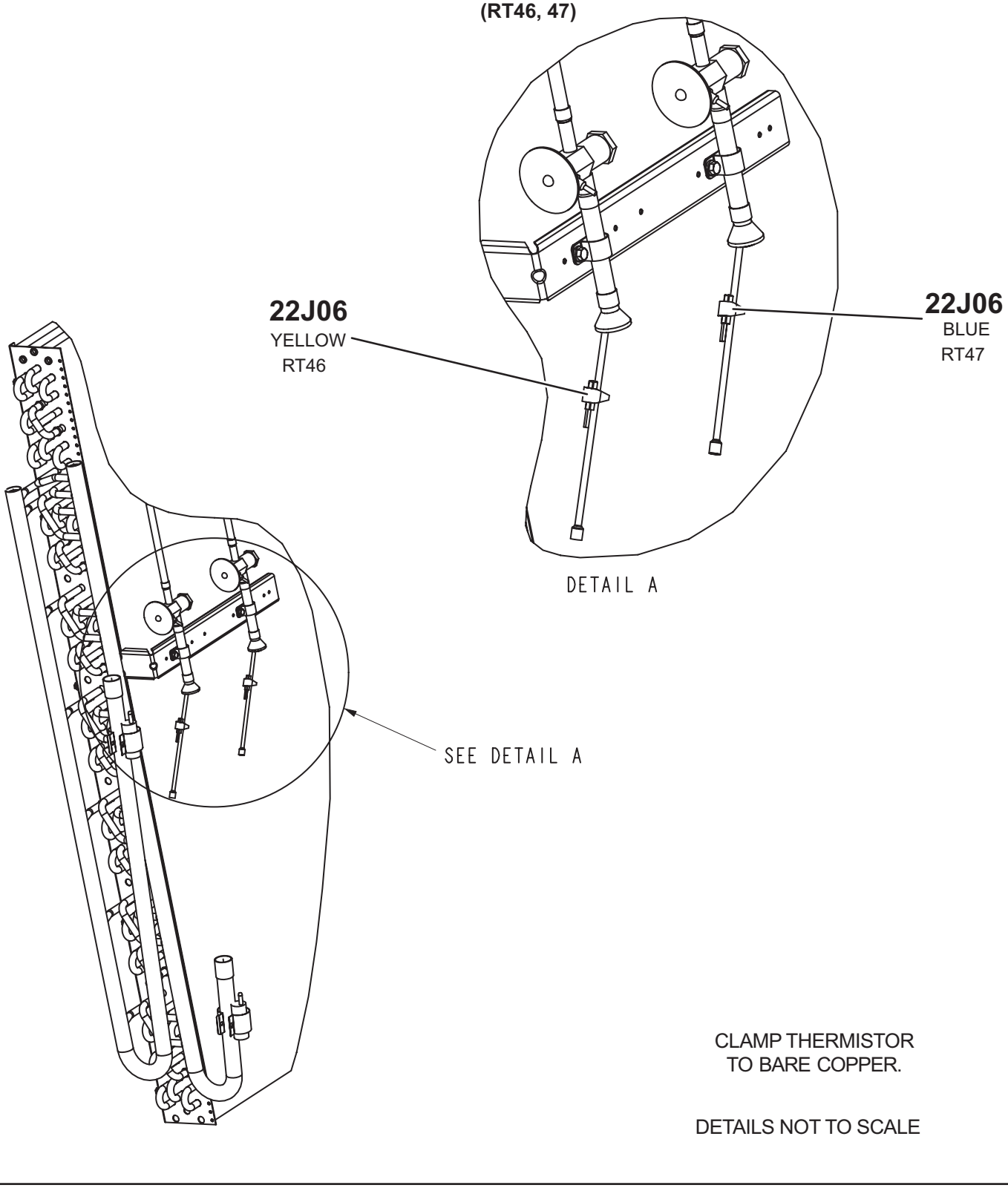
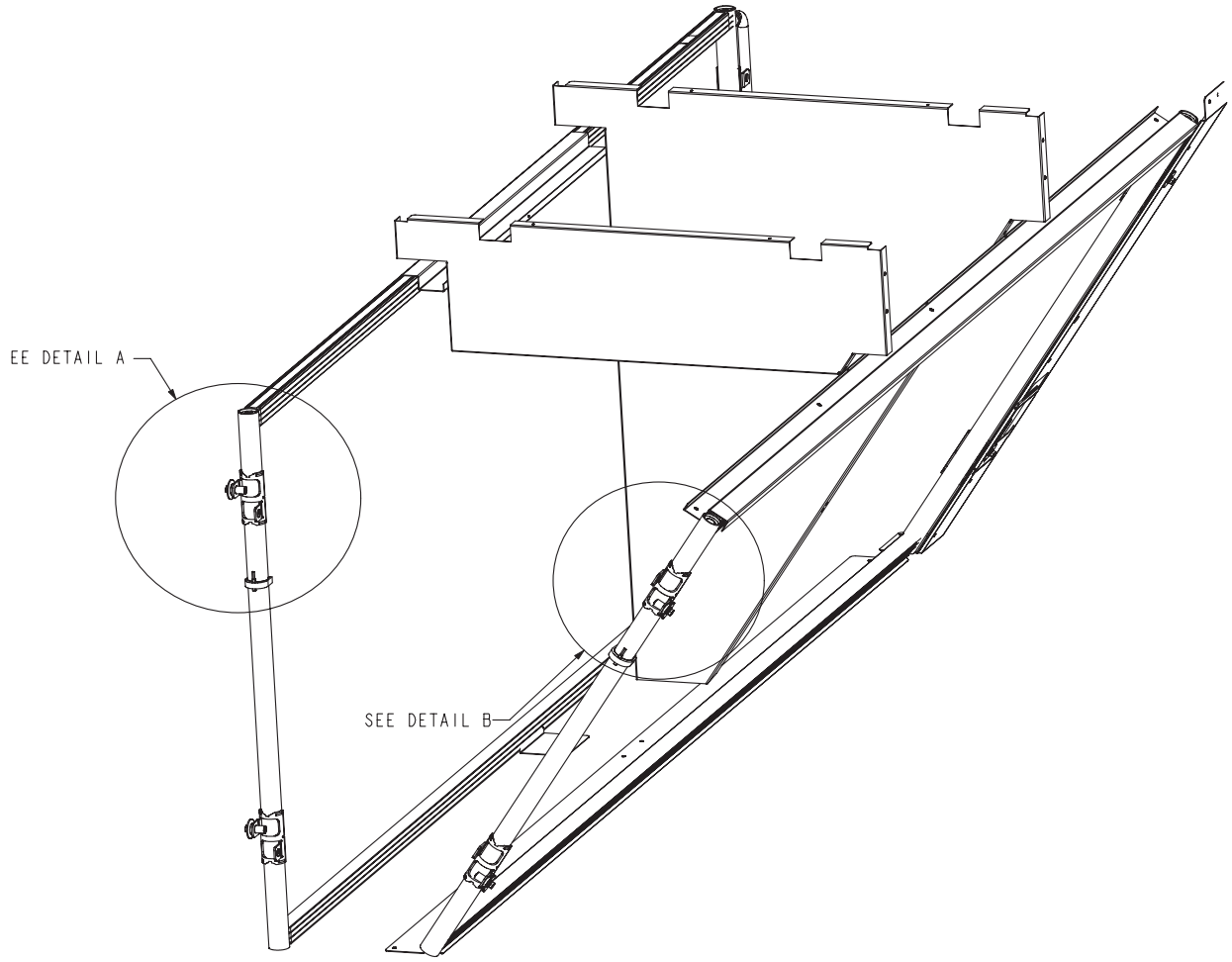
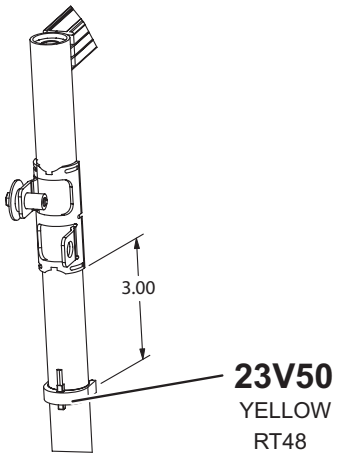


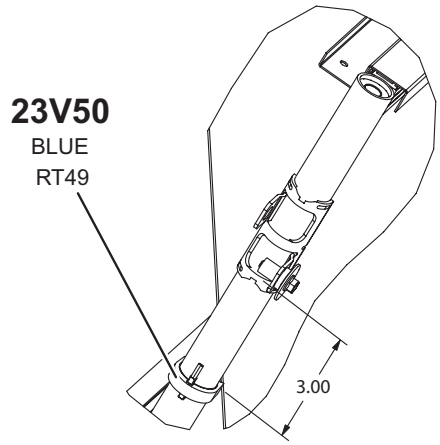
FIGURE 5

LGT/LCT156
CONDENSER / OUTDOOR COIL
(RT48, 49)





DETAIL A



DETAIL B

CLAMP THERMISTOR
TO BARE COPPER.

DETAILS NOT TO SCALE

FIGURE 6

LGT/LCT180
EVAPORATOR / INDOOR COIL
RT46, 47, 50

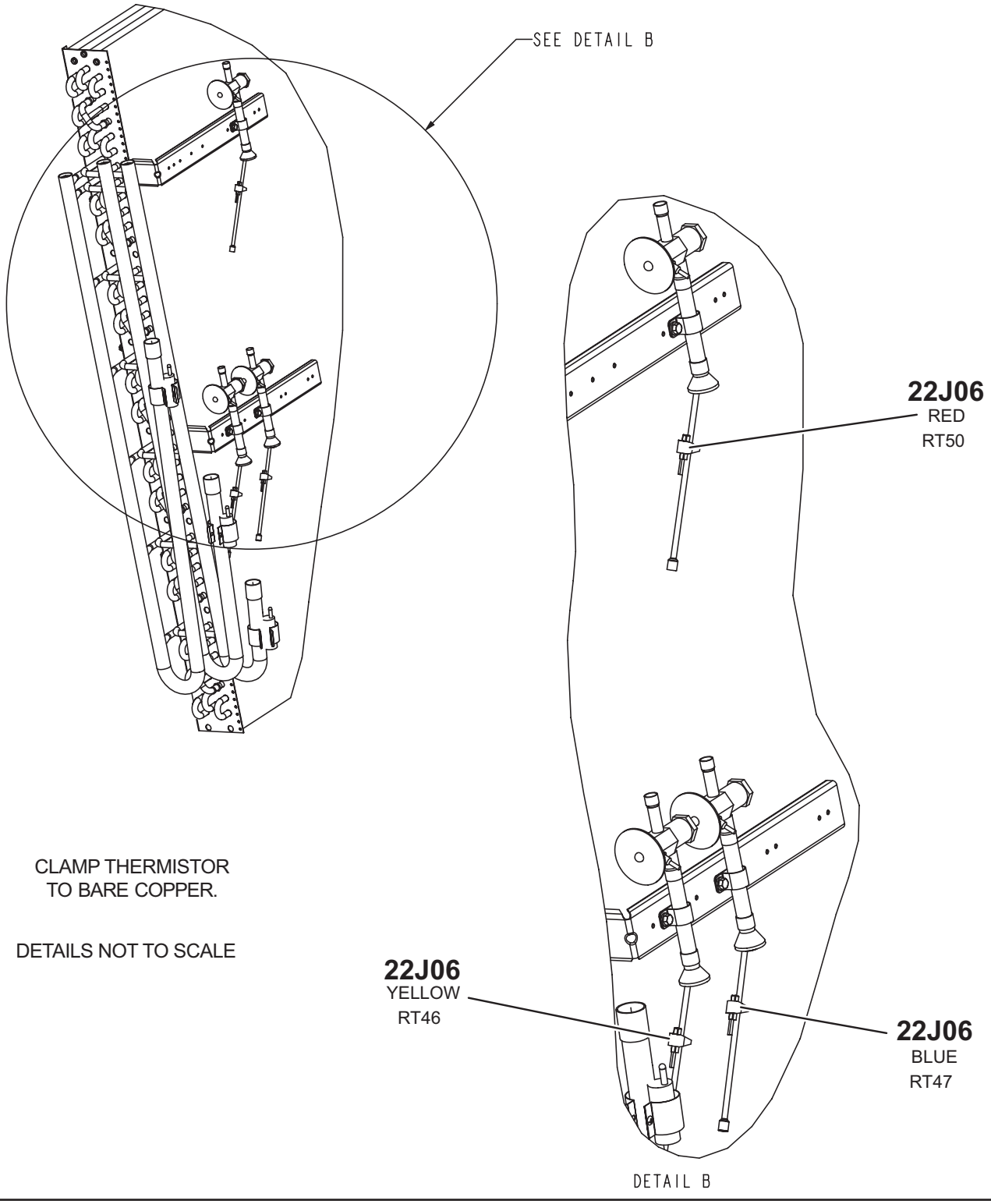
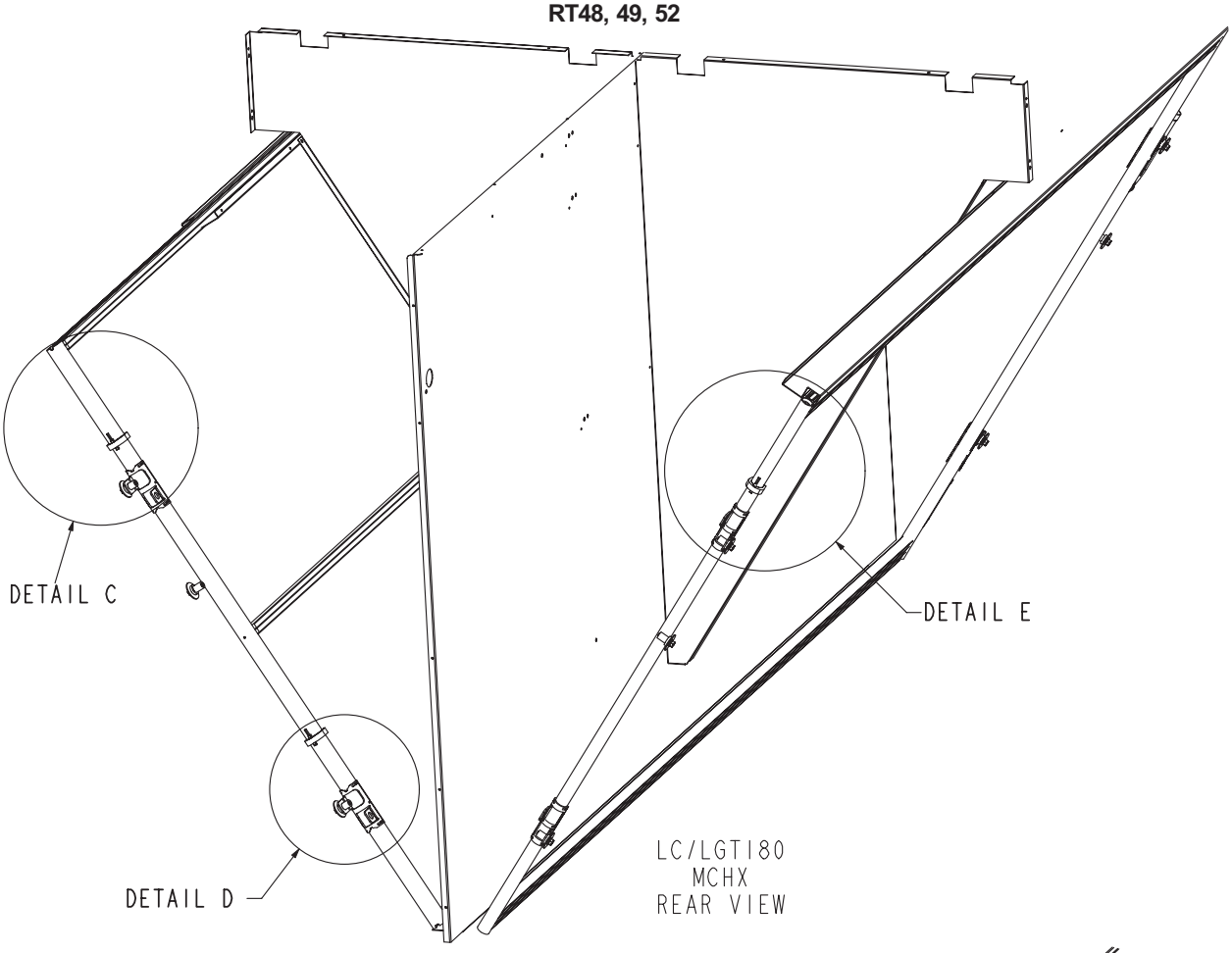
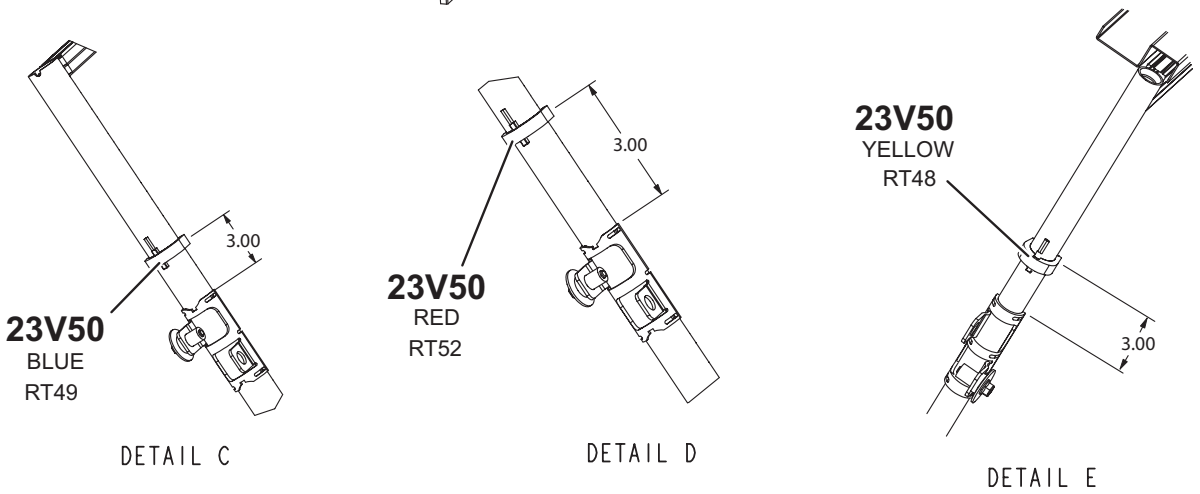


FIGURE 7

LGT/LCT180
CONDENSER / OUTDOOR COIL
RT48, 49, 52





DETAILS NOT TO SCALE

FIGURE 8

LGT/LCT210, 240, 300
EVAPORATOR / INDOOR COIL
RT46, 47, 50, 51

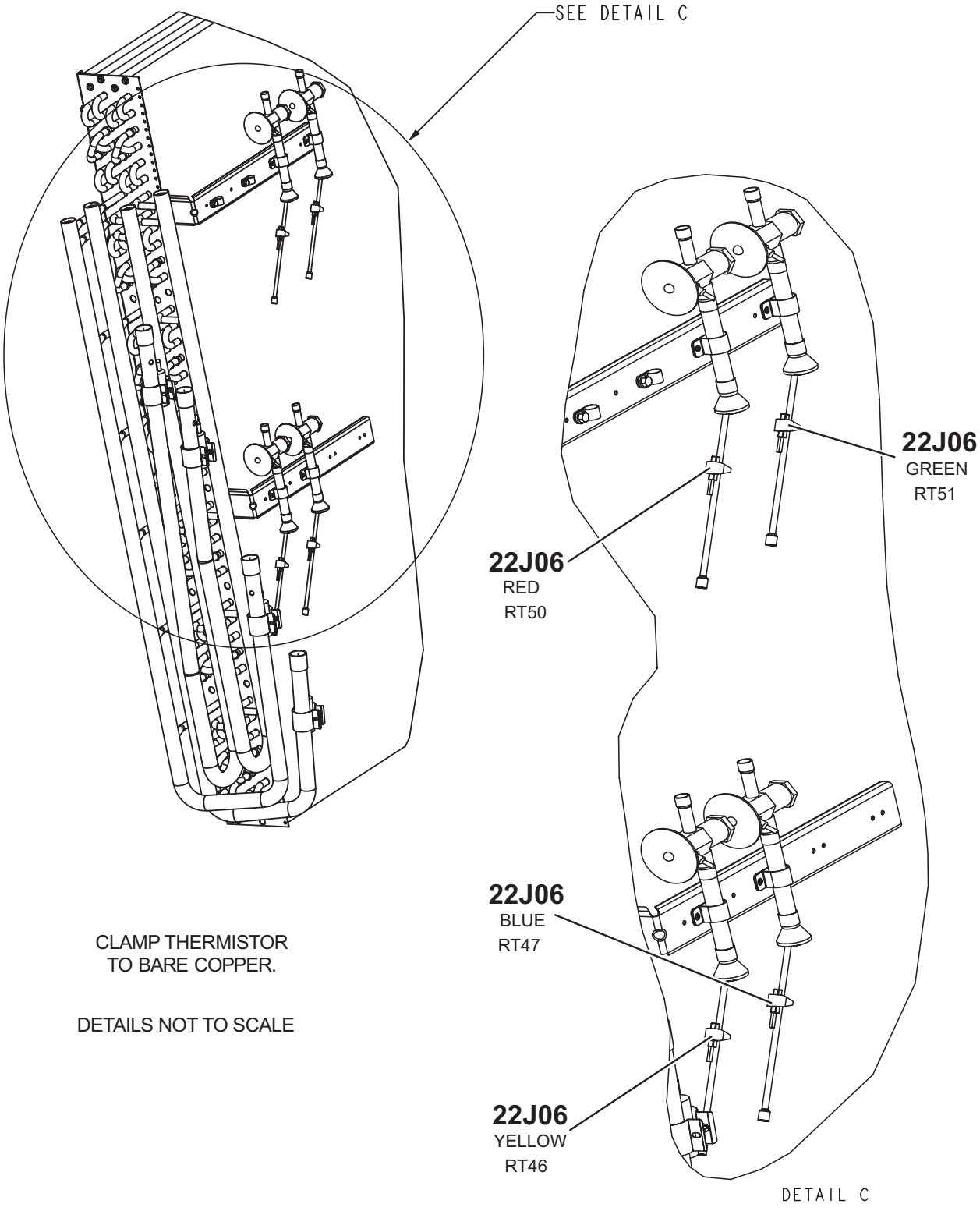


FIGURE 9

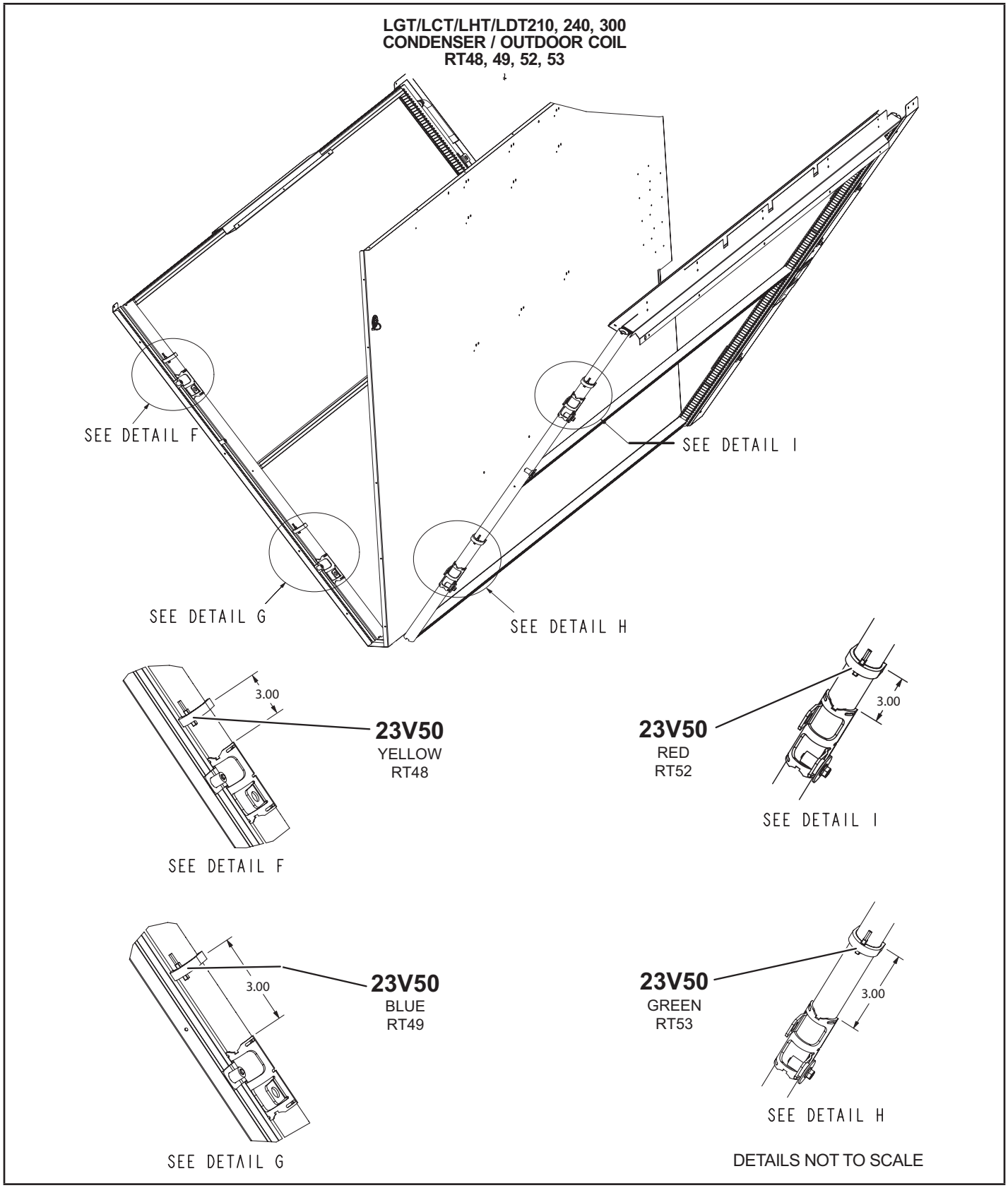

LGT/LCT/LHT/LDT210, 240, 300
CONDENSER / OUTDOOR COIL
RT48, 49, 52, 53
SEE DETAIL F
SEE DETAIL I
SEE DETAIL G
SEE DETAIL H
3.00
23V50
YELLOW
RT48
SEE DETAIL F
23V50
RED
RT52
3.00
SEE DETAIL I
3.00
23V50
BLUE
RT49
SEE DETAIL G
23V50
GREEN
RT53
3.00
SEE DETAIL H
DETAILS NOT TO SCALE

FIGURE 10

TABLE 4

Resistance vs. Temperature

Temp. °F (°C)	Resistance +/-2%	Temperature °F (°C)	Resistance +/-2%	Temp. °F (°C)	Resistance +/-2%
-40 (-40)	335,671	40 (4.4)	26,106	90 (32.2)	7,332
-20 (-28.9)	164,959	50 (10)	19,904	100 (37.8)	5,826
0 (-17.8)	85,323	60 (15.6)	15,313	120 (48.9)	3,756
20 (-6.7)	46,218	70 (21.1)	11,884	130 (54.4)	3,047
30 (-1.1)	34,566	80 (26.7)	9,298		

16-RDS Sensors

Units are equipped with factory-installed RDS Sensors located on different points on the unit. The RDS sensors provide the Unit Controller with continuous readings for leaked refrigerant concentration levels and sensor health status (Good or Fault). These readings are used to modify unit operation to disperse the leaked refrigerant and to remove possible ignition sources. In addition, the Unit Controller uses these readings to initiate alarms to alert the operator of a refrigerant leak or faulty sensor(s).

Each sensor must be specifically placed for proper unit operation and to initiate valid alarms. To identify sensor locations see TABLE 5.

TABLE 5	
Unit Model	**Figure**
Indoor Coil Area Sensor	FIGURE 11
Control/Compressor Compartment Sensor	FIGURE 12

TABLE 6 - RDS Alarms

Alarm	Alarm description	RDS Sensor Location
257	Refrigerant leak sensor fault in the Indoor section (sensor #1)	Indoor compartment
258	Refrigerant leak sensor fault in the control panel/compressor section (sensor #2)	"Control/Compressor or Compressor compartment"

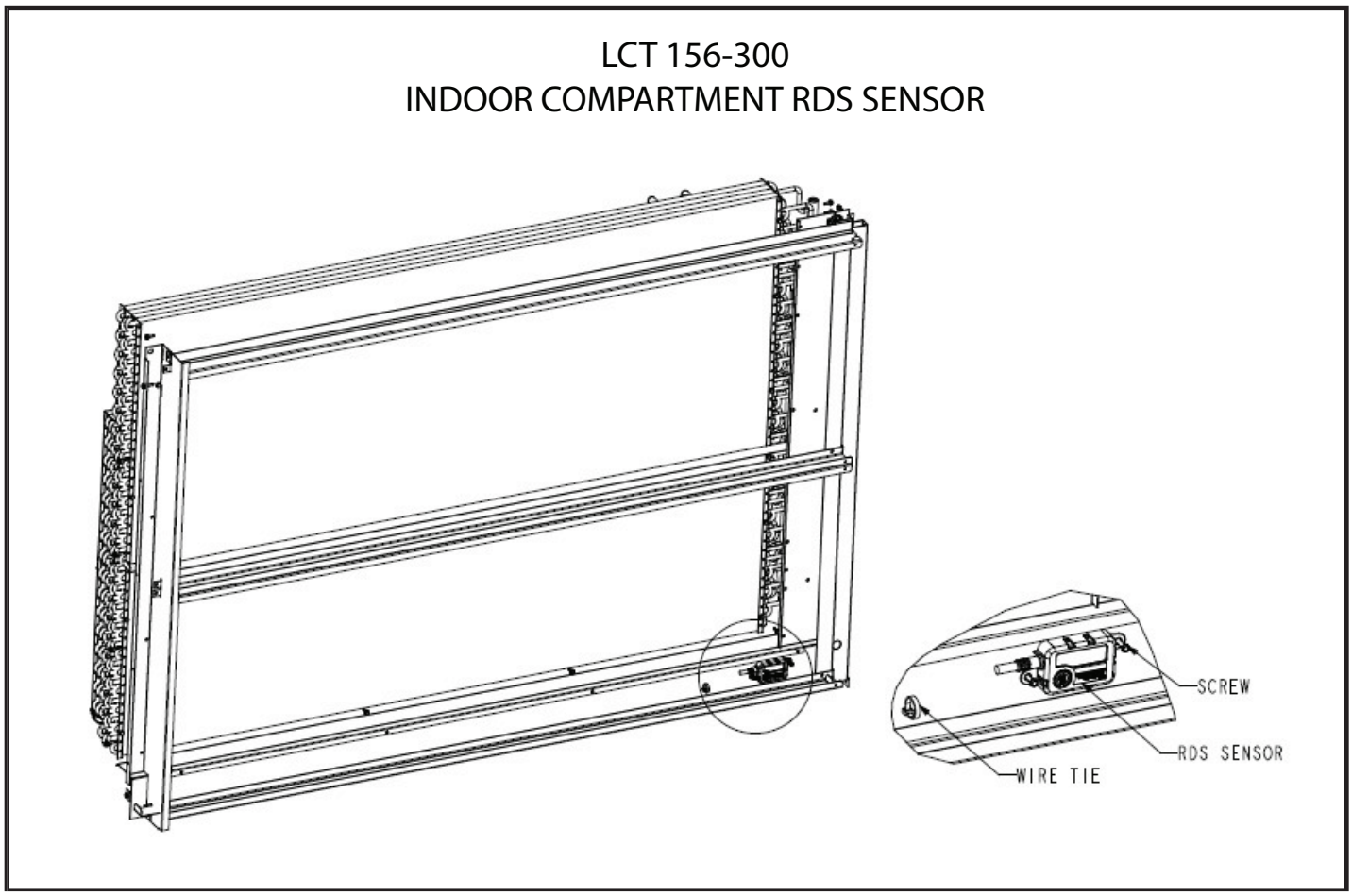


FIGURE 11

LCT 156-300
COMPRESSOR RDS SENSOR

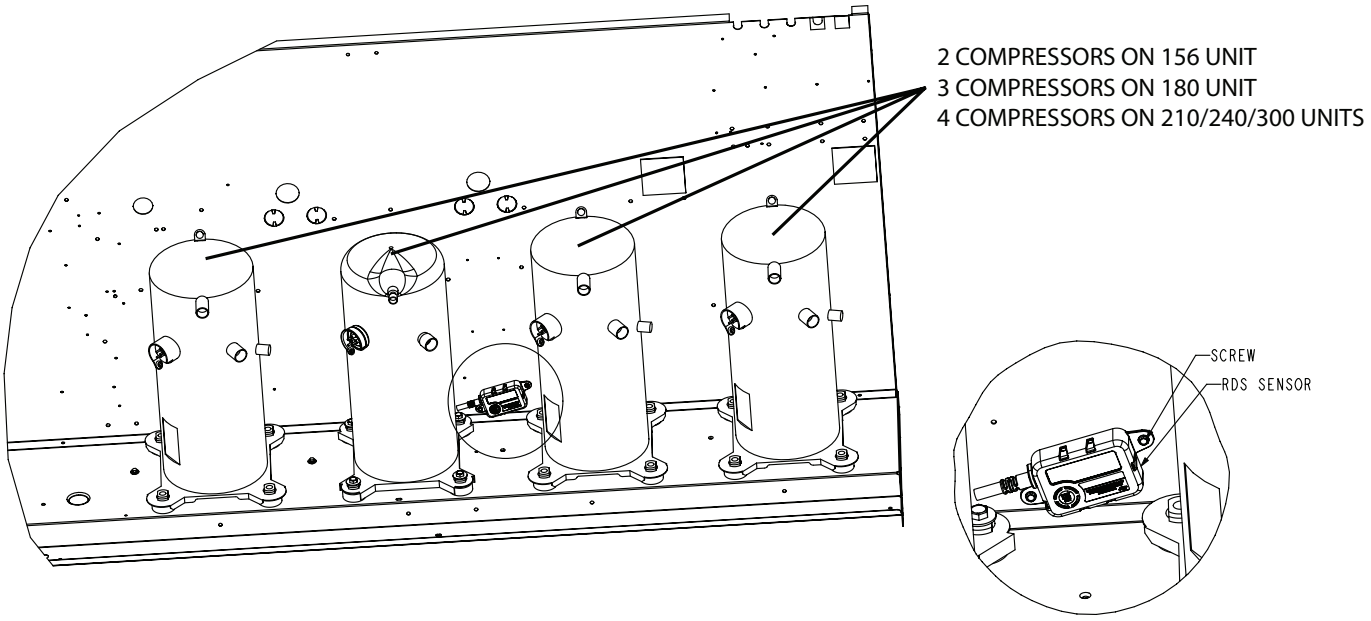
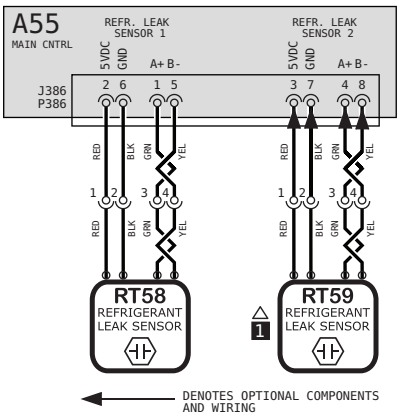


FIGURE 12

RDS SENSOR WIRING DIAGRAM



KEY LIST	
COMPONENT	**DESCRIPTION**
A55	CONTROL BOARD, MAIN
RT58	SENSOR 1, REFR. LEAK DETECTION
RT59	SENSOR 2, REFR. LEAK DETECTION

△	NOTES
1	REFRIGERANT LEAK SENSOR 2 (RT59), MAY NOT BE PRESENT IN ALL UNITS.

WARNING

DISCONNECT ALL POWER BEFORE SERVICING.

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

FOR USE WITH COPPER CONDUCTORS ONLY. REFER TO UNIT RATING PLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM OVERCURRENT PROTECTION SIZE.

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

MODEL: Units w/CORE Contr.
Refr. Leak Detection
VOLT: All
SUPSDS: N/A NO: 538440-01

Rev 0

3 x 7
CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-012295C	04-03-2024	MXR6	MXT5	ORIGINATED AT PD&R CARROLLTON, TX

FIGURE 13

17-Relative Humidity Sensor - Optional

The indoor relative humidity sensor (A91) is an analog sensor with a 0-10VDC output over a relative humidity range of 0-100% relative humidity. The sensor is powered with 24VAC.

18-Enthalpy Sensor - Optional

The optional enthalpy sensors (A7 and A63) used with the economizer have an output of 4-20mA. The sensor is powered with 18VAC provided by M3 unit control.

19-Economizer Differential Pressure Sensor - Optional

Rooftop units installed with Smart Airflow™ will have a Pressure Transducer (PT5) present in the economizer. PT5 requires 5VDC power supply (P266-5 and {P266-6) and gives 0.25 VDC to 4 VDC output (P266-4) corresponding to 0" water column and 2" water column respectively. For all practical purposes the output should be less than 1.2" water column if not an error code is stored and service alarm output is turned on.

20-Room Sensors

Room sensor (A2) is a two-wire thermistor with 1k series resistor.

TABLE 7

Two-Wire Thermistor

Temp. °F (°C)	Resistance +/-2%	Temperature °F (°C)	Resistance +/-2%	Temp. °F (°C)	Resistance +/-2%
40 (4.4)	27,102	60 (15.6)	16,313	80 (26.7)	10,299
45 (7.2)	23,764	65 (18.3)	14,474	85 (29.4)	9,249
50 (10)	20,898	70 (21.1)	12,882	90 (32.2)	8,529
55 (12.8)	18,433	75 (23.9)	11,498		

21-Carbon Dioxide Sensor

The indoor carbon dioxide sensor (A63) is an analog sensor with a 0-10VDC output over a carbon dioxide range of 0-2000 ppm as shown in the following table. The sensor is powered with 24VAC.

TABLE 8

Carbon Dioxide Range

Carbon Dioxide PPM	DC Voltage	Carbon Dioxide PPM	DC Voltage	Carbon Dioxide PPM	DC Voltage	Carbon Dioxide PPM	DC Voltage
0	0	600	3	1200	6	1800	9
200	1	800	4	1400	7	2000	10
400	2	1000	5	1600	8		

22-VAV Supply Static Sensor

The supply duct differential static pressure sensor (A30) is an analog sensor with a 0-10VDC output over a range of 0-5"w.c as shown in the following table. The sensor is powered with 24VAC.

TABLE 9

Carbon Dioxide Range

Pressure "w.c.	DC Voltage	Pressure "w.c.	DC Voltage	Pressure "w.c.	DC Voltage	Pressure "w.c.	DC Voltage
0	0	1.5	3	3	6	4.5	9
0.5	1	2	4	3.5	7	5	10
1	2	2.5	5	4	8		

23-Second-Stage Power Exhaust Relay K231 (Staged-Blower units equipped with power exhaust)

The second power exhaust fan is controlled by K231. A133 will enable K231 only when the blower reaches 70% of full speed (adjustable ECTO). This prevents a negative building pressure when the blower is operating in low speed. Refer to the Unit Controller manual and ECTO labels on the unit.

24-Outdoor Fan Transformers T5

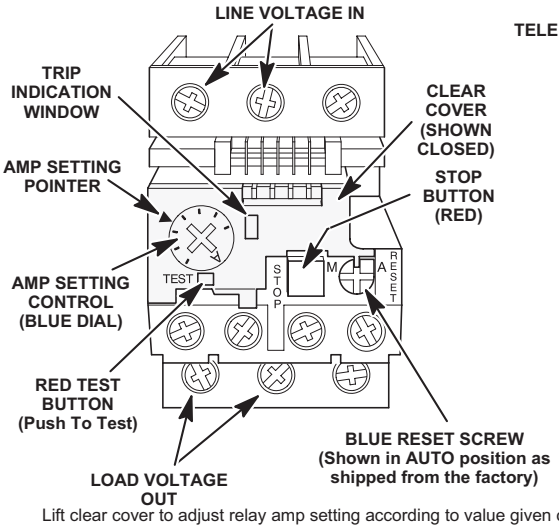
All 460 (G) and 575 (J) voltage units use transformer T5. The auto voltage to 230VAC transformer is mounted in the control box. The transformer has an output rating of 0.5A. T5 transformer supplies 230 VAC power to outdoor fans B21 (156), B5 & B22 (180/210), B21 & B24 (240/300).

25-Fuse F61 (Higher SCCR units only)

Fuse F61 is used on units with higher SCCR rating. F61 provides overcurrent protection to compressor and other cooling components. F61 and S48 are located inside a sheet metal enclosure in the unit left front corner mullion.

26-Blower Motor Overload Relay S42

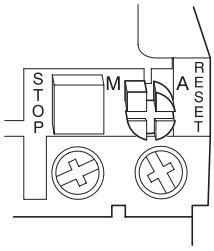
The relay (S42) is connected in line with the blower motor to monitor the current flow to the motor. When the relay senses an overload condition, a set of normally closed contacts open to de-energize pin #1 in plug P299 of the A55 Unit Controller. A55 de-energizes all outputs. Units will be equipped with a relay manufactured by Telemecanique FIGURE 14 or Siemens FIGURE 15.



TELEMECANIQUE OVERLOAD RELAY

DETAIL SHOWING RESET BUTTON ADJUSTED TO MANUAL POSITION

Lift clear cover and turn adjustment screw counterclockwise. Reset screw will pop out when pointer is in M (manual position). Close cover to lock reset screw into position.



Lift clear cover to adjust relay amp setting according to value given on the blower motor nameplate. Proper relay amp setting equals motor nameplate FLA X service factor of 1.15 X .95.

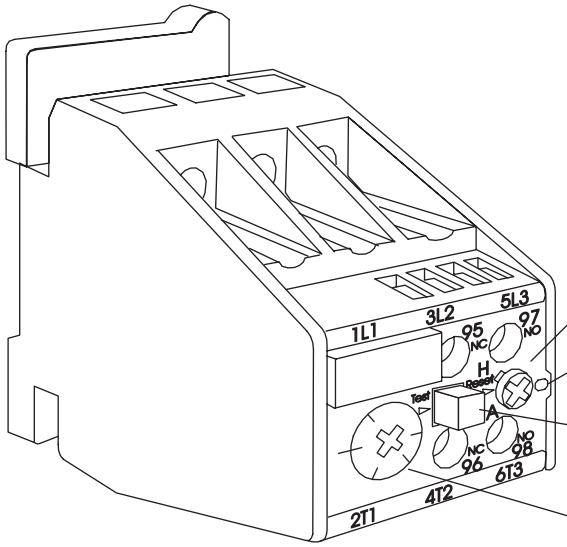
Cover must also be lifted to adjust control mode from automatic reset to manual reset (see detail above) and to test the control.

Control must be in the manual reset mode to perform a test. Use a pointed object to press the small red test button. A yellow marker should appear in the trip indication window to the right of the amp setting control. Press the blue reset screw to reset the relay.

The red STOP button opens the normally closed contacts which power the blower motor. This button stops blower motor operation as long as it is pressed in.

FIGURE 14

SIEMENS OVERLOAD RELAY



BLUE RESET BUTTON IN FACTORY-SET AUTO MODE (Turn clockwise to H for manual reset)

GREEN TRIP INDICATOR (Flush with surface -- not tripped; Above surface -- tripped)

RED TEST BUTTON

AMP ADJUSTMENT DIAL

Adjust relay amp setting according to value given on the blower motor nameplate. Proper relay amp setting equals motor nameplate FLA X service factor of 1.15 X .95.
Use small slotted screwdriver to adjust control mode from automatic reset (A) to manual reset (H).
Control must be in the manual reset mode (H) to perform a test. Press the red test button. Green trip indicator should pop out. Press the blue reset screw to reset the relay.

FIGURE 15

Compressor Detail
B1, B2

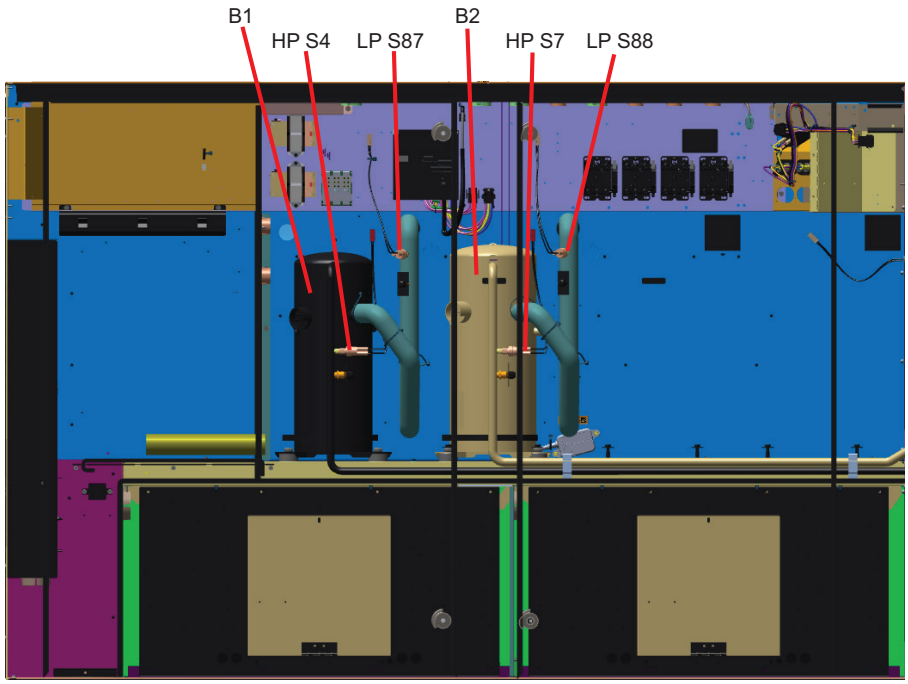


FIGURE 16

Compressor Detail
B1, B2, B13

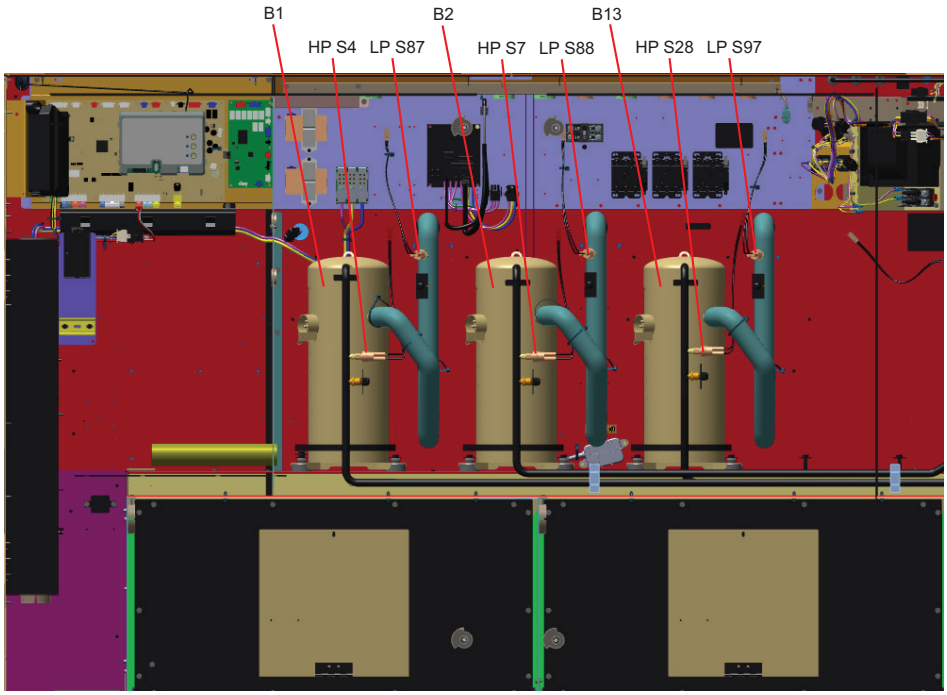


FIGURE 17

Compressor Detail
B1, B2, B13, B20

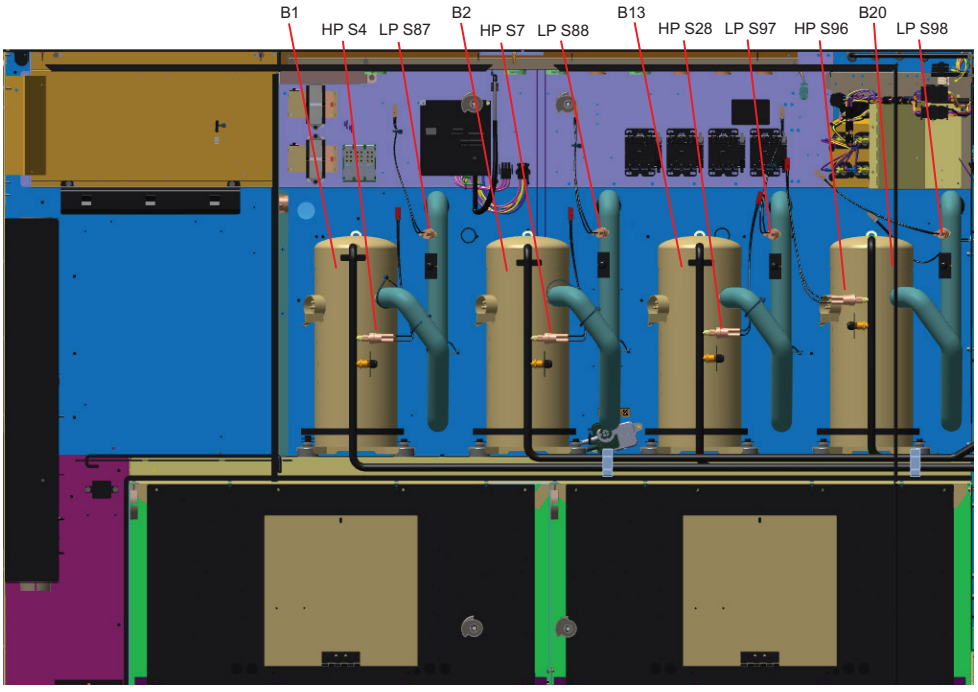


FIGURE 18

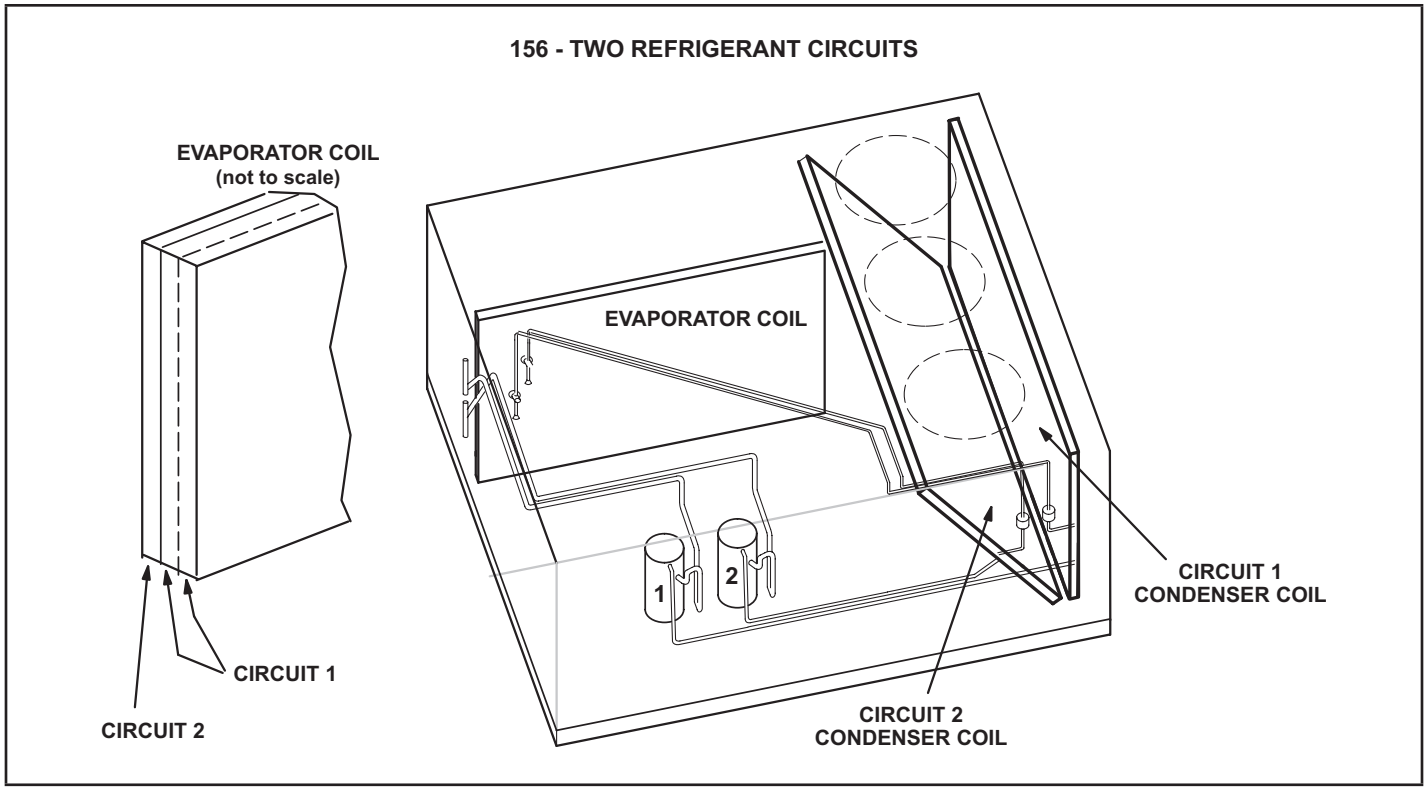


FIGURE 19

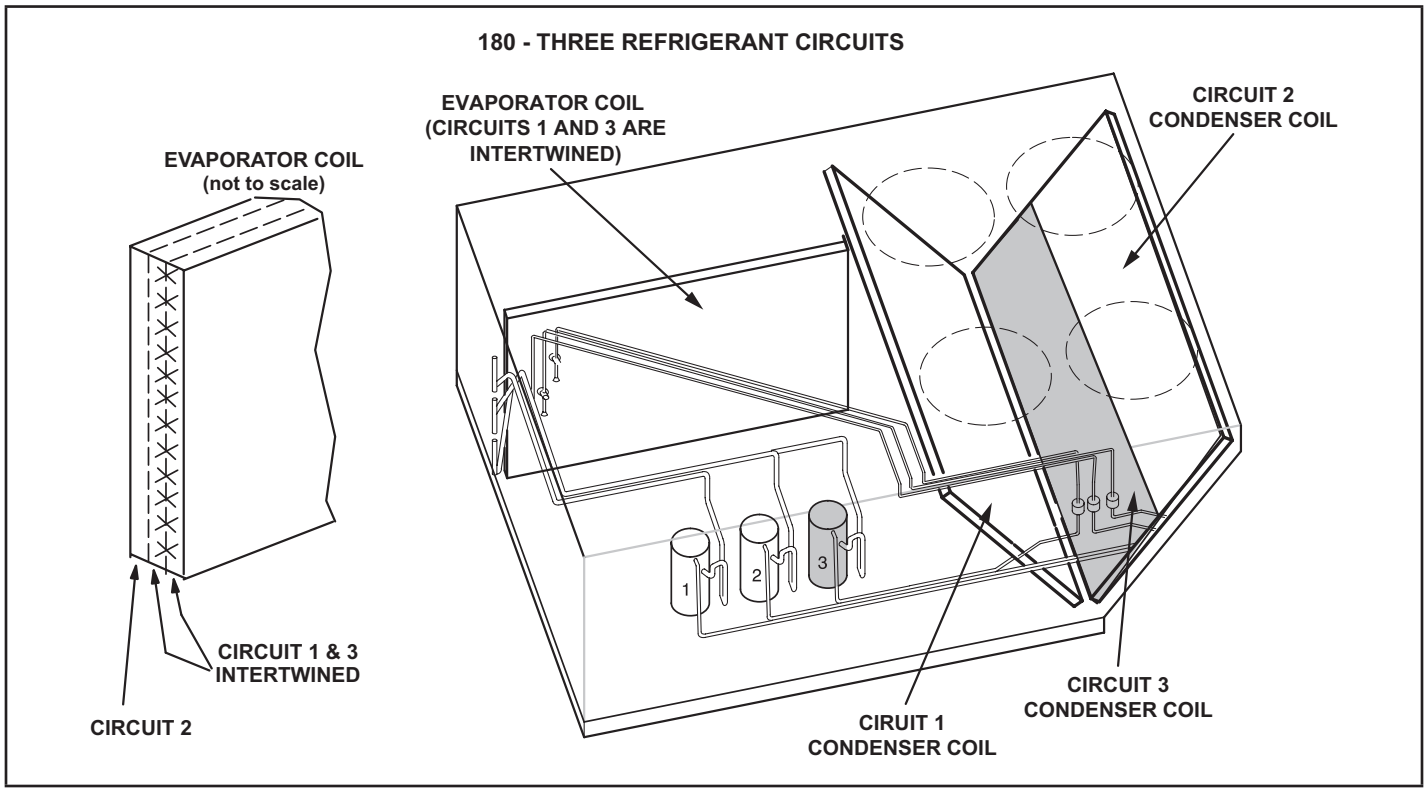


FIGURE 20

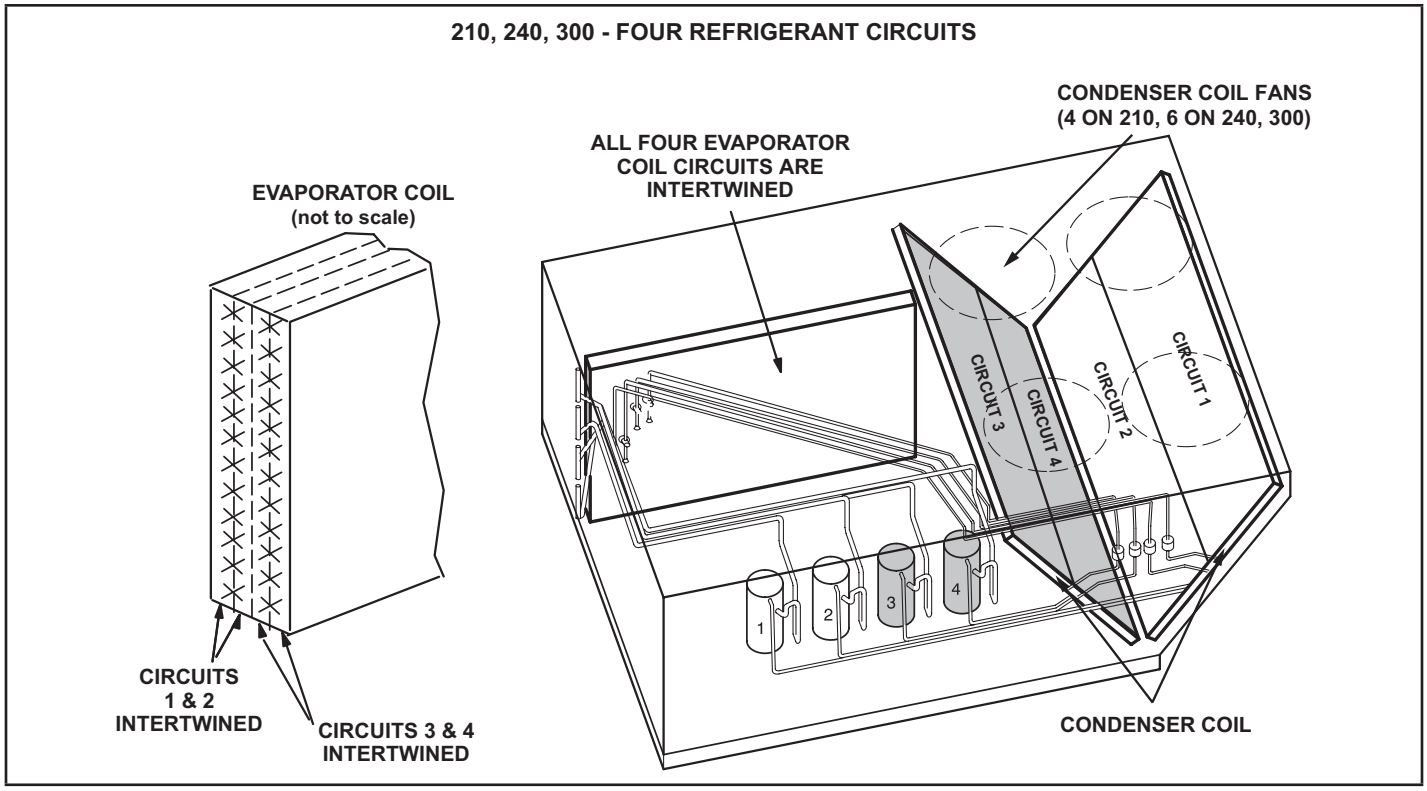


FIGURE 21

B-Cooling Components

Units use independent cooling circuits consisting of one compressor, one condenser coil, and one evaporator coil per circuit.

Three draw-through type condenser fans are used in LCT156, four draw-through type condenser fans are used in LCT180, 210 units and six draw-through type condenser fans are used in LCT240, 300 units.

Cooling may be supplemented by a factory-or field-installed economizer. 156 Units use a row split evaporator while 180, 210, 240 and 300 use intertwined evaporators. Each evaporator uses a thermostatic expansion valve as the primary expansion device. Each evaporator is also equipped with enhanced fins and rifled tubing. In all units each compressor is protected by a crankcase heater, high pressure switch and low pressure switch.

1-Compressors B1, B2, B13, B20

All units use scroll compressors. LCT156 use 2 compressors, 180 use 3 compressors and LCT 210, 240 and 300 use four compressors. Compressor capacity may vary from stage to stage. In all cases, the capacity of each compressor is added to reach the total capacity of the unit. See “SPECIFICATIONS” and “ELECTRICAL DATA” (table of contents) or compressor nameplate for compressor specifications.

⚠ WARNING

Electrical shock hazard. Compressor must be grounded. Do not operate without protective coverover terminals. Disconnect power before removing protective cover. Discharge capacitors before servicing unit. Failure to follow these precautions could cause electrical shock resulting in injury or death.

Each compressor is energized by a corresponding compressor contactor.

NOTE-*Refer to the wiring diagram section for specific unit operation.*

If a compressor replacement is necessary, call 1-800-453-6669.

⚠ IMPORTANT

Some scroll compressors have an internal vacuum protector that will unload scrolls when suction pressure goes below 20 psig. A hissing sound will be heard when the compressor is running unloaded. Protector will reset when low pressure in system rises above 40 psig. DO NOT REPLACE COMPRESSOR.

2-Crankcase Heaters HR1, HR2, HR5 & HR11

All LCT units use insertion type heaters. Heater HR1 is installed around compressor B1, heater HR2 compressor B2, HR5 compressor B13 and HR11 compressor B20.

3-High Pressure Switches S4, S7, S28, S96

S4 all units

S7 all units

S28 180, 210, 240, 300 units

S96 210, 240, 300

The high pressure switches is an auto-reset SPST N.C. switch which opens on a pressure rise. All units are equipped with this switch. The switch is located in the compressor discharge line and is wired in series with the compressor contactor coil through A55 unit controller or A178 compressor 3 and 4 controller. See FIGURE 16, FIGURE 17 and FIGURE 18.

S4 and S7 are is wired in series with B1 and B2 compressor contactors and S28 and S96 are wired in series with B13 and B20 compressor contactors.

When discharge pressure rises to 640 ± 10 psig (indicating a problem in the system) the switch opens and the respective compressor(s) is de-energized (the economizer can continue to operate). When discharge pressure drops to 475 ± 20 psig the pressure switch will close re-energizing the compressor(s).Main control A55 has a three-strike counter before locking out. This means the control allows three high pressure trips per one thermostat demand. The control can be reset by breaking and remaking the thermostat demand or manually resetting the control

4-Low Pressure Switches S87, S88, S97, S98

S87 all units

S88 all units

S97 180, 210, 240, 300 units

S98 210, 240, 300 units

The low pressure switch is an auto-reset SPST N.O. switch (held N.C. by refrigerant pressure) which opens on a pressure drop. All units are equipped with this switch. The switch is located in the compressor suction line. See FIGURE 16, FIGURE 17 and FIGURE 18. .

S87 and S88 (compressor one and two) and S98 (compressor three) ans S98 (compressor 4) are wired in series with the contactor coils through the A55 Unit Controller

The Unit Controller A55 governs the low pressure switches by shunting the switches during start up until pressure is stabilized. After the shunt period, the control has a three-strike counter, during a single thermostat demand, before the compressor(s) is locked out. The control is resetby breaking and remaking the thermostat demand or manually resetting the control.

When suction pressure drops to 40 $\pm$ 5 psig (indicating low pressure), the switch opens and the compressor(s) is de-energized. The switch automatically resets when pressure in the suction line rises to 90 $\pm$ 5 psig.

5-Filter Drier (all units)

Units have a filter drier located in the liquid line of each refrigerant circuit at the exit of each condenser coil. The drier removes contaminants and moisture from the system.

6-Condenser Fans

B4, B5, B21 (156 units)

B4, B5, B21, B22 (180, 210 units)

B4, B5, B21, B22, B23 and B24 (240, 300 units)

See SPECIFICATIONS tables at the front of this manual for specifications of condenser fans used in all units. All condenser fans used have single-phase motors. The fan assembly may be removed for servicing and cleaning.

7-Temperature Thermistor

RT46/47/50/51 (ID) - RT48/49/52/53 OD

Temperature thermistors are located on specific points for each refrigeration circuit. Temperature thermistors provide continuous temperature input to the unit controller for proper cooling operation as well as system protection.

Controller logic will de-energize compressors for each refrigeration circuit when evaporator coil temperature falls below 32°F to prevent evaporator freeze-up

C-Blower Compartment

The blower compartment is located between the evaporator coil and the compressor / control section on the opposite side of the condenser coil. The blower assembly is accessed by disconnecting the blower motor wiring (and all other plugs) and removing the screws on either side of the sliding base. The base pulls out as shown in FIGURE 23.

1-Blower Wheels

All units have two 15 in. x 15 in. blower wheels. Both wheels are driven by one motor.

2-Indoor Blower Motor B3

All units use three-phase single-speed blower motors. CFM adjustments are made by adjusting the motor pulley (sheave). Motors are equipped with sealed ball bearings. All motor specifications are listed in the SPECIFICATIONS (table of contents) in the front of this manual. Units may be equipped with motors manufactured by various manufacturers, therefore electrical FLA and LRA specifications will vary. See unit rating plate for information specific to your unit.

OPERATION / ADJUSTMENT

Supply Air Staged Units - The blower rotation will always be correct on units equipped with an inverter. Checking blower rotation is not a valid method of determining voltage phasing for incoming power.**Supply Air Staged Units and Units Equipped With Optional Voltage or Phase Detection -** The Unit Controller checks the incoming power during start-up. If the voltage or phase is incorrect, the Unit Controller will display an alarm and the unit will not start.

A-Blower Operation

Refer to the Unit Controller Setup Guide to energize blower. Use this mobile service app (the QR is located in the control area) menu:

SERVICE > TEST > BLOWER

Instructions provided with the thermostat may also be used to initiate blower only (G) demand. Unit will cycle on thermostat demand. The following steps apply to applications using a typical electro-mechanical thermostat.

1 - Blower operation is manually set at the thermostat subbase fan switch. With fan switch in ON position, blowers will operate continuously.

2 - With fan switch in AUTO position, the blowers will cycle with demand. Blowers and entire unit will be off when system switch is in OFF position.

⚠ IMPORTANT

Three Phase Scroll Compressor Voltage Phasing

Three phase scroll compressors must be phased sequentially to ensure correct compressor and blower* rotation and operation. Compressor and blower are wired in phase at the factory. Power wires are color-coded as

follows: line 1-red, line 2-yellow, line 3-blue.

1-Observe suction and discharge pressures and blower* rotation on unit start-up.

2-Suction pressure must drop, discharge pressure must rise and blower* rotation must match rotation marking. If pressure differential is not observed or blower* rotation is not correct:

3-Disconnect all remote electrical power supplies.

4-Reverse any two field-installed wires connected to the line side of S48 disconnect or TB13 terminal strip. Do not reverse wires at blower contactor.

5-Make sure the connections are tight. Discharge and suction pressures should operate at their normal start-up ranges.

***Supply air inverter blower motors should rotate in the correct direction; verify scroll compressor rotation separately. Contact technical support if the blower is rotating incorrectly.**

⚠ WARNING

1-Make sure that unit is installed in accordance with the installation instructions and applicable codes.

2-Inspect all electrical wiring, both field- and factoryinstalled, for loose connections. Tighten as required.

3-Check to ensure that refrigerant lines do not rub against the cabinet or against other refrigerant lines.

4-Check voltage at disconnect switch. Voltage must be within range listed on nameplate. If not, consult power company and have voltage condition corrected before starting unit.

5-Make sure filters are new and in place before start-up.

B-Blower Access

1 - Disconnect jack/plug connector to blower motor. Also disconnect jack/plug connector heating limit switches on gas units.

2 - Remove screws on either side of blower assembly sliding base. See FIGURE 23.

3 - Pull base toward outside of unit.

C-Determining Unit CFM

IMPORTANT - *Multi-staged supply air units are factory-set to run the blower at full speed when there is a blower (G) demand without a heating or cooling demand. Refer to the field-provided, design specified CFM for all modes of operation. Use the following procedure to adjust motor pulley to deliver the highest CFM called for in the design spec. See Inverter Start-Up section to set blower CFM for all modes once the motor pulley is set.*

1 - The following measurements must be made with a dry indoor coil. Run blower (G demand) without a cooling demand. Measure the indoor blower shaft RPM. Air filters must be in place when measurements are taken.

2 - With all access panels in place, measure static pressure external to unit (from supply to return). Blower performance data is based on static pressure readings taken in locations shown in FIGURE 22.

Note - *Static pressure readings can vary if not taken where shown.*

3 - See table of contents for Blower Data and or Optional Accessories. Use static pressure and RPM readings to determine unit CFM.

4 - The blower RPM can be adjusted at the motor pulley. Loosen Allen screw and turn adjustable pulley clockwise to increase CFM. Turn counterclockwise to decrease CFM. See FIGURE 23. Do not exceed minimum and maximum number of pulley turns as shown in TABLE 21.

TABLE 10

MINIMUM AND MAXIMUM PULLEY ADJUSTMENT

Belt	Min Turns Open	Max Turns Open
A Section	No Minimum	5
B Section	1*	6

*No minimum number of turns open when B belt is used on pulleys 6” O.D. or larger.

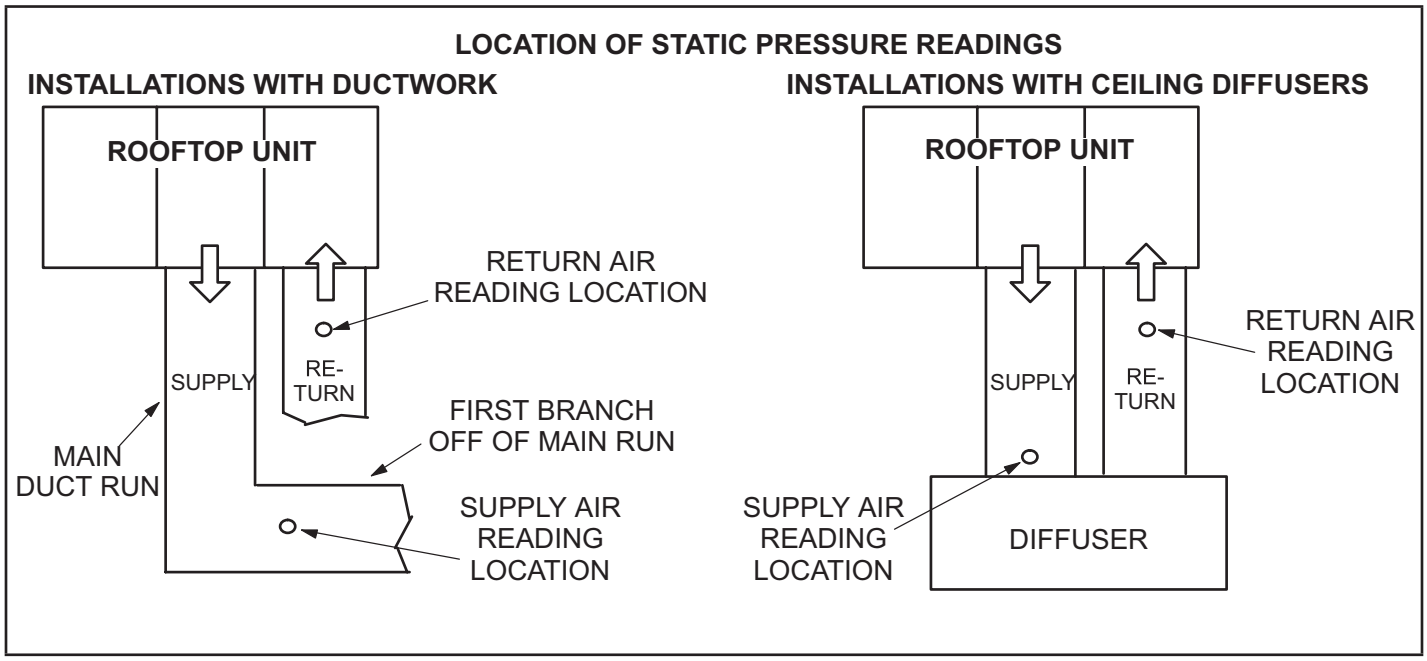


FIGURE 22

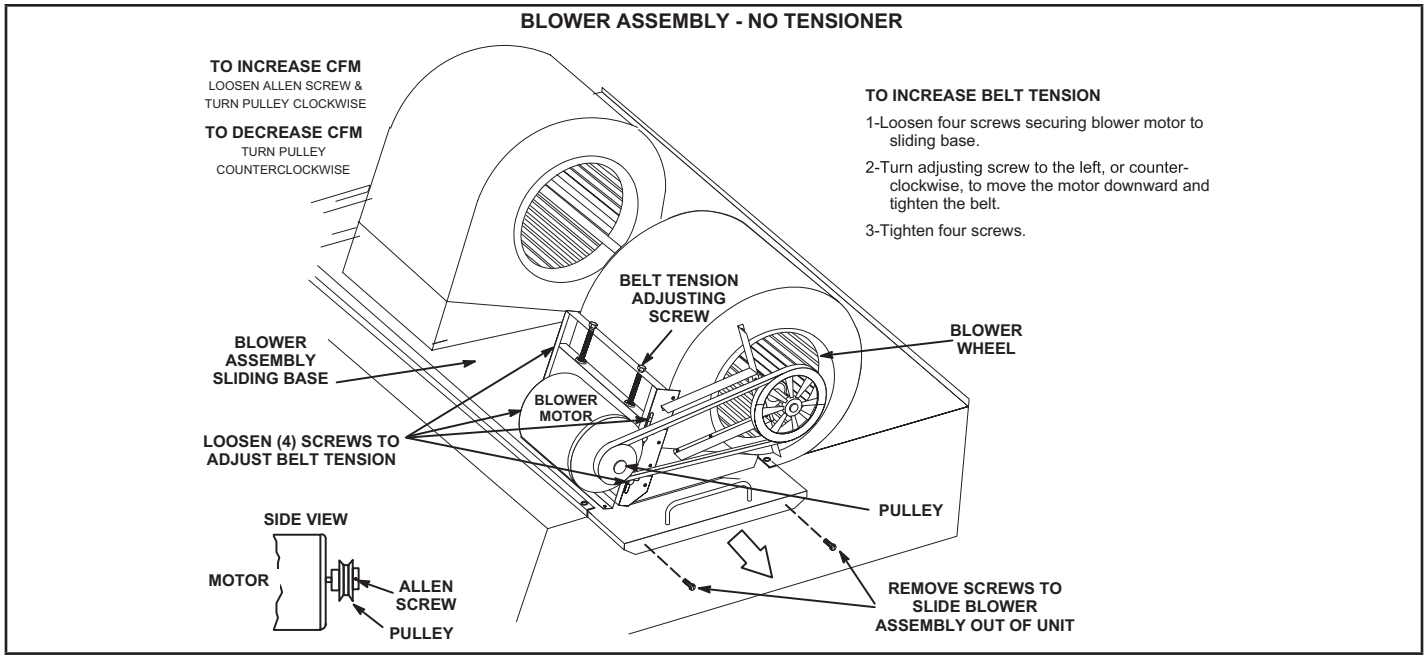


FIGURE 23

D-Blower Belt Adjustment

Maximum life and wear can be obtained from belts only if proper pulley alignment and belt tension are maintained. Tension new belts after a 24-48 hour period of operation. This will allow belt to stretch and seat into pulley grooves. Make sure blower and motor pulley are aligned. See FIGURE 24 for blowers not equipped with a tensioner and FIGURE 25 for units equipped with an optional belt tensioner.

Blowers Without Belt Tensioner

1 - Loosen four screws securing blower motor to sliding base. See FIGURE 23.

2 - *To increase belt tension -*

Turn belt tension adjusting screw to the left, or counterclockwise, to tighten the belt. This increases the distance between the blower motor and the blower housing.

3 - To loosen belt tension -

Turn the adjusting screw to the right, or clockwise to loosen belt tension. 3- Tighten four screws securing blower motor to sliding base once adjustments have been made.

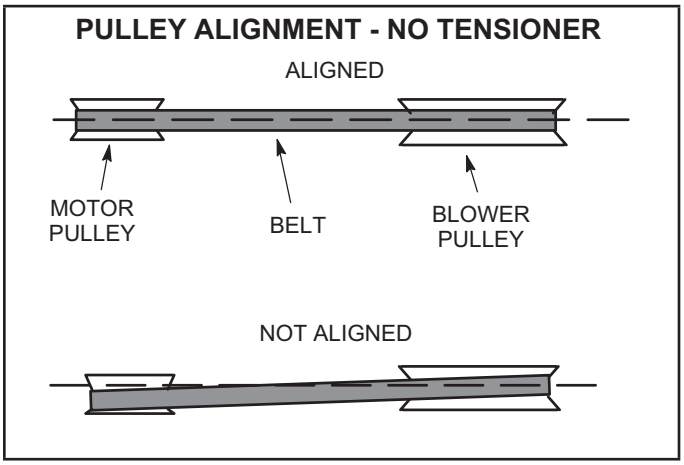


FIGURE 24

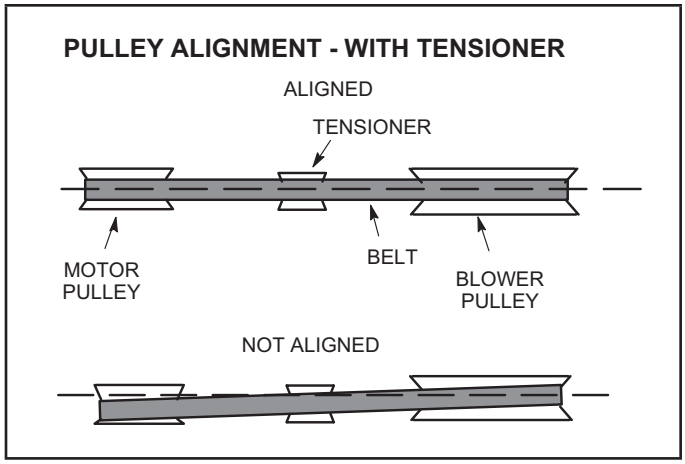


FIGURE 25

E-Check Belt Tension

Overtensioning belts shortens belt and bearing life. Check belt tension as follows:

1 - Measure span length X. See FIGURE 26.

2 - Apply perpendicular force to center of span (X) with enough pressure to deflect belt 1/64" for every inch of span length.

Example: Deflection distance of a 40" span would be 40/64" or 5/8".

3 - Measure belt deflection force. For a used belt, the deflection force should be 5 lbs. . A new belt deflection force should be 7 lbs

A force below these values indicates and undertensioned belt. A force above these values indicates an overtensioned belt.

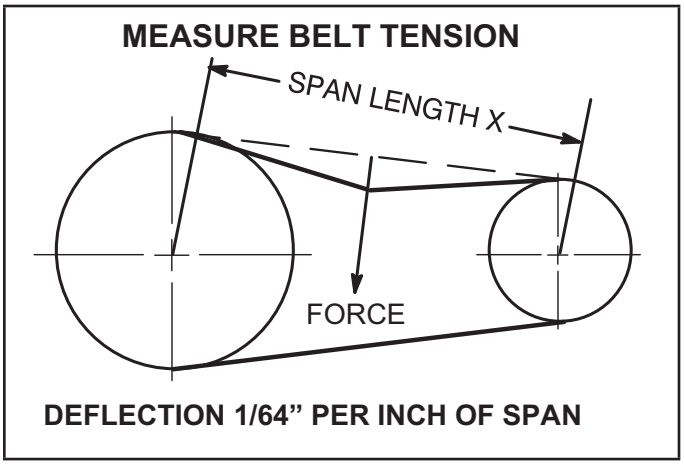


FIGURE 26

F-Field-Furnished Blower Drives

See BLOWER DATA tables for blower drives.

D-OPTIONAL ELECTRIC HEAT

See ELECTRICAL / ELECTRIC HEAT DATA and ELECTRIC HEAT CAPACITIES (table of contents) for LCH to EHA match-ups and electrical ratings.

EHA parts arrangement is shown in FIGURE 28 and FIGURE 29. All electric heat sections consist of electric heating elements exposed directly to the air stream. Two electric heat sections (first section and second section) are used in all 15kW through 90kW heaters. See FIGURE 27. Multiple-stage elements are sequenced on and off in response to thermostat demand.

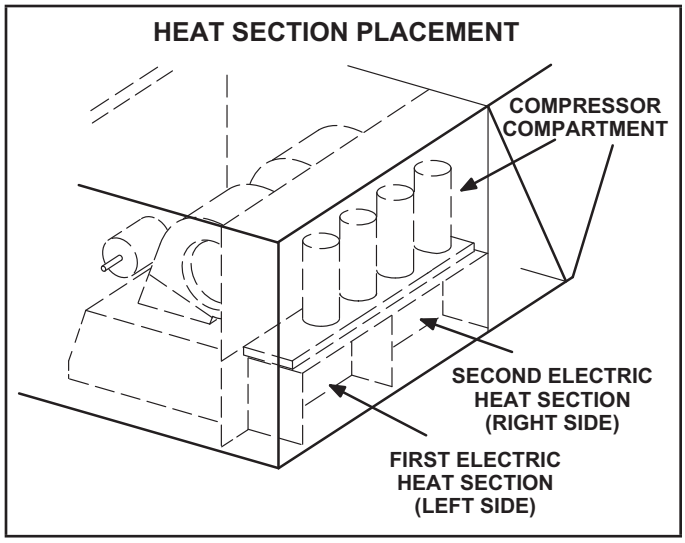


FIGURE 27

1-Main Control Box Components A55, K9

The main control box (FIGURE 3) houses the A55 Unit Controller and the K9 electric heat relay.

2-Contactors K15, K16, K17 and K18

Contactors K15, K16, K17 and K18 are all three-pole double-break contactors located on the electric heat vestibule. K15 and K16 are located on the first electric heat section, while K17 and K18 are located on the second electric heat section. However, in the 15 and 30kW heaters, the first section houses all contactors and fuses. All contactors are equipped with a 24VAC coil. The coils in the K15, K16, K17 and K18 contactors are energized by the main panel A55. Contactors K15 and K17 energize the first stage heating elements, while K16 and K18 energize the second stage heating elements.

3-High Temperature Limits S15 and S107 (Primary)

S15 and S107 are SPST N.C. auto-reset thermostats located on the back panel of the electric heat section below the heating elements. S15 is the high temperature limit for the first electric heat section, while S107 is the high temperature limit for the second electric heat section. Both thermostats are identical and are wired to the A55 Unit Controller. When either S15 or S107 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. The thermostats used on EHA360-45-1 Y/G/J are factory set to open at 200F $\pm$ 5F on a temperature rise and automatically reset at 160F $\pm$ 6F on a temperature fall. All other electric heat section thermostats are factory set to open at 170F $\pm$ 5F on a temperature rise and automatically reset at 130F $\pm$ 6F on a temperature fall. The thermostats are not adjustable.

4-Terminal Strip TB3

Electric heat line voltage connections are made to terminal strip TB3 (or a fuse block on some models) located in the upper left corner of the electric heat vestibule.

5-Heating Elements HE1 through HE14

Heating elements are composed of helix wound bare nichrome wire exposed directly to the air stream. Three elements are connected in a three-phase arrangement. The elements in 208/230V units are connected in a “Delta” arrangement. Elements in 460 and 575V units are connected in “Wye” arrangement.

Each stage is energized independently by the corresponding contactors located on the electric heat vestibule panel. Once energized, heat transfer is instantaneous. High temperature protection is provided by primary and redundant high temperature limits and overcurrent protection is provided by fuses.

6-Fuse F3

Fuse F3 are housed in a fuse block which holds three fuses. Each F3 fuse is connected in series with each leg of electric heat. FIGURE 28, FIGURE 29 and TABLE 11 shows the fuses used with each electric heat section. For simplicity, the service manual labels the fuses F3 - 1 through F3 - 8..

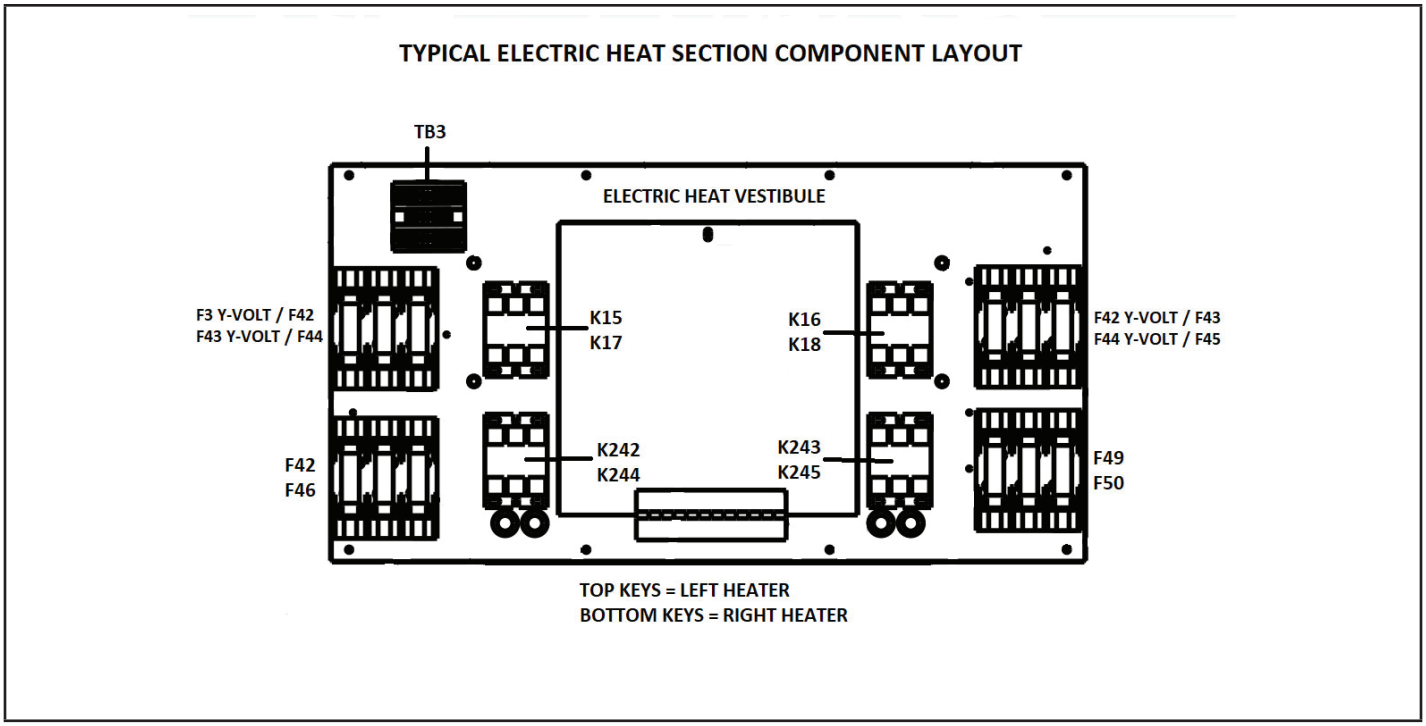


FIGURE 28

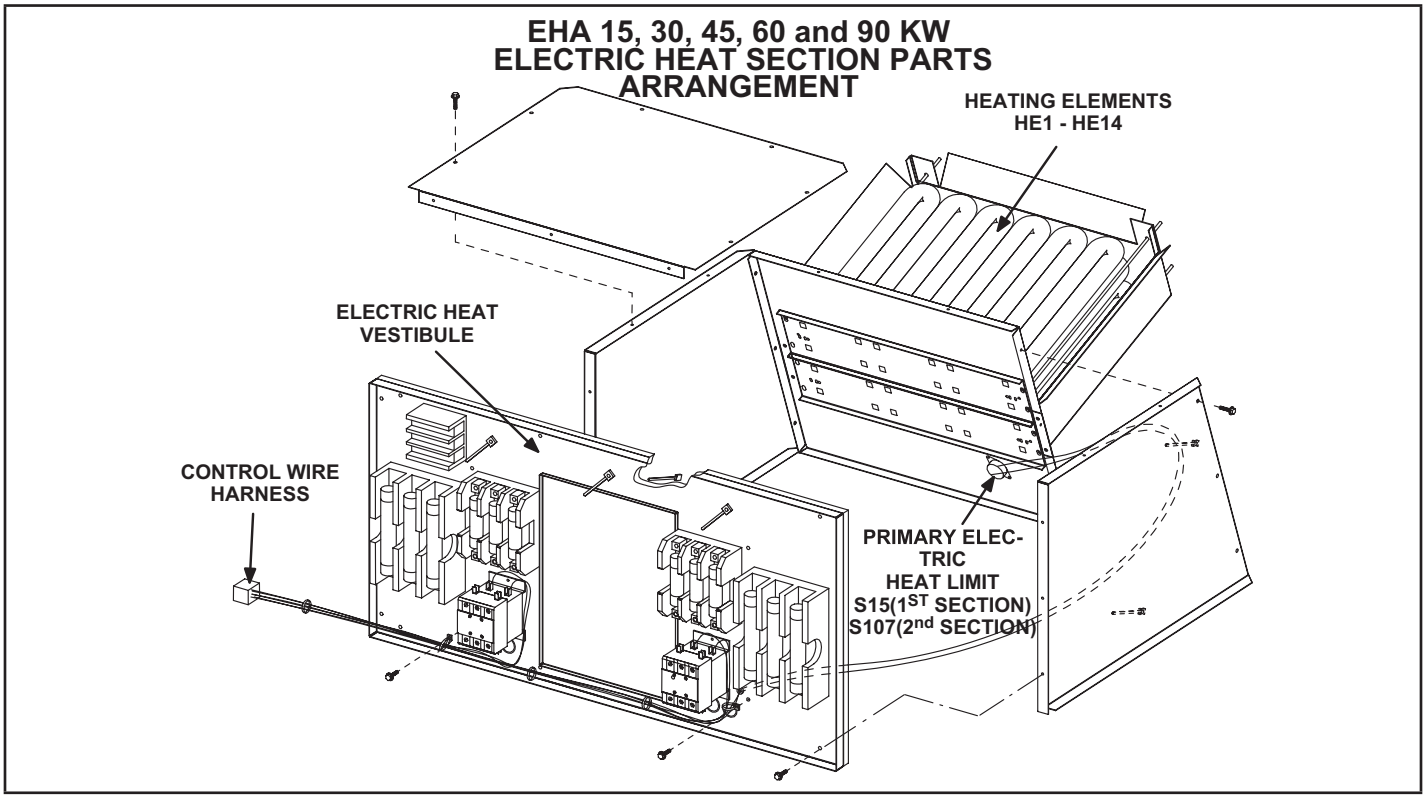


FIGURE 29

TABLE 11

ELECTRIC HEAT SECTION FUSE RATING									
EHA QUANTITY & SIZE	**VOLTAGES**	**FUSE (3 each)**							
		F3 - 1	**F3 - 2**	**F3 - 3**	**F3 - 4**	**F3 - 5**	**F3 - 6**	**F3 - 7**	**F3 - 8**
(1) EHA240-7.5 & (1) EHA240S-7.5 (15 kW Total)	208/230V	50 Amp 250V	-----	-----	-----	-----	-----	-----	-----
	460V	25 Amp 600V	-----	-----	-----	-----	-----	-----	-----
	575V	20 Amp 600V	-----	-----	-----	-----	-----	-----	-----
(1) EHA360-15 & (1) EHA360S-15 (30 kW Total) or (1) EHA156-15 & (1) EHA156S-15	208/230V	60 Amp 250V	60 Amp 250V	-----	-----	-----	-----	-----	-----
	460V	50 Amp 600V	-----	-----	-----	-----	-----	-----	-----
	575V	40 Amp 600V	-----	-----	-----	-----	-----	-----	-----
(2) EHA360-22.5 (45 kW Total) or (2) EHA156-22.5	208/230V	50 Amp 250V	-----	-----	25 Amp 250V	50 Amp 250V	-----	-----	25 Amp 250V
	460V	25 Amp 600V	-----	-----	15 Amp 600V	25 Amp 600V	-----	-----	15 Amp 600V
	575V	20 Amp 600V	-----	-----	10 Amp 600V	20 Amp 600V	-----	-----	10 Amp 600V
(2) EHA150-30 (60 kW Total) or (2) EHA156-30	208/230V	50 Amp 250V	-----	-----	50 Amp 250V	50 Amp 250V	-----	-----	50 Amp 250V
	460V	25 Amp 600V	-----	-----	25 Amp 600V	25 Amp 600V	-----	-----	25 Amp 600V
	575V	20 Amp 600V	-----	-----	20 Amp 600V	20 Amp 600V	-----	-----	20 Amp 600V
(2) EHA360-45 (90 kW Total)	208/230V	50 Amp 250V	-----	60 Amp 250V	60 Amp 250V	50 Amp 250V	-----	60 Amp 250V	60 Amp 250V
	460V	25 Amp 600V	-----	-----	50 Amp 600V	25 Amp 600V	-----	-----	50 Amp 600V
	575V	20 Amp 600V	-----	-----	40 Amp 600V	20 Amp 600V	-----	-----	40 Amp 600V

II-CHARGING

A-Refrigerant Charge and Check - All-Aluminum Coil

WARNING-Do not exceed nameplate charge under any condition.

This unit is factory charged and should require no further adjustment. If the system requires additional refrigerant, *reclaim the charge, evacuate the system, and add required nameplate charge.*

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 unit is earth grounded 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 unit.

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.

- 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-of f valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery
- 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
- 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.

NOTE - *System charging is not recommended below 60°F (15°C). In temperatures below 60°F (15°C), the charge must be weighed into the system.*

If weighing facilities are not available, or to check the charge, use the following procedure:

1 - Make sure outdoor coil is clean. Attach gauge manifolds and operate unit at full CFM in cooling mode with economizer disabled until system stabilizes (approximately five minutes). Make sure all outdoor air dampers are closed.

2 - Compare the normal operating pressures to the pressures obtained from the gauges. Check unit components if there are significant differences.

3 - Measure the outdoor ambient temperature and the suction pressure. Refer to the charging curve to determine a target liquid temperature.

NOTE - *Pressures are listed for sea level applications.*

4 - Use the same thermometer to accurately measure the liquid temperature (in the outdoor section).

- If measured liquid temperature is higher than the target liquid temperature, add refrigerant to the system.
- If measured liquid temperature is lower than the target liquid temperature, recover some refrigerant from the system..

5 - Add or remove charge in increments. Allow the system to stabilize each time refrigerant is added or removed.

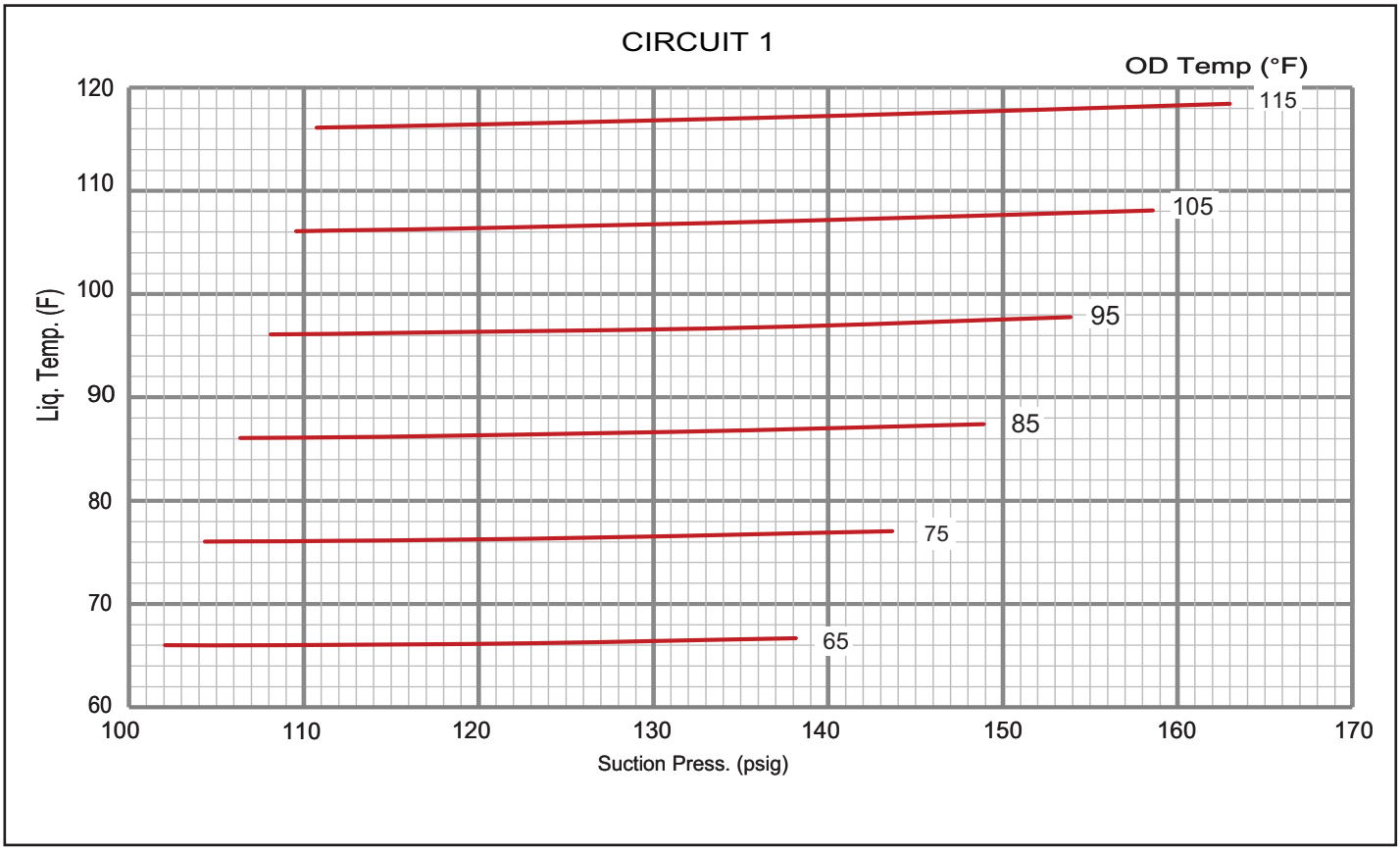
6 - Continue the process until measured liquid temperature agrees with the target liquid temperature. Do not go below the target liquid temperature when adjusting charge. Note that suction pressure can change as charge is adjusted.

7 - Example: At 95°F outdoor ambient and a measured suction pressure of 130psig, the target liquid temperature is 96°F. For a measured liquid temperature of 106°F, add charge in increments until measured liquid temperature agrees with the target liquid temperature.

TABLE 12
LGT/LCT 156 NO REHEAT OPERATING PRESSURES - ALL-ALUMINUM OD COIL - 581081-02

	Outdoor Coil Entering Air Temperature											
	65°F		75°F		85°F		95°F		105°F		115°F	
	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)
Circuit 1	102	217	104	253	106	294	108	340	110	390	111	446
	109	219	112	255	114	295	117	341	119	392	121	447
	123	224	127	259	131	300	136	345	138	396	141	451
	138	231	144	266	149	306	154	352	159	402	163	457
Circuit 2	102	230	105	267	107	309	108	356	109	408	108	464
	108	233	112	270	114	312	117	359	118	411	119	468
	119	240	124	277	129	320	134	360	137	419	139	475
	130	247	138	285	144	328	150	375	155	427	160	484

LGT/LCT 156 NO REHEAT CHARGING CURVE CIRCUIT 1 - ALL-ALUMINUM OD COIL - 581082-02



LGT/LCT 156 NO REHEAT CHARGING CURVE CIRCUIT 2 - ALL-ALUMINUM OD COIL - 581082-02

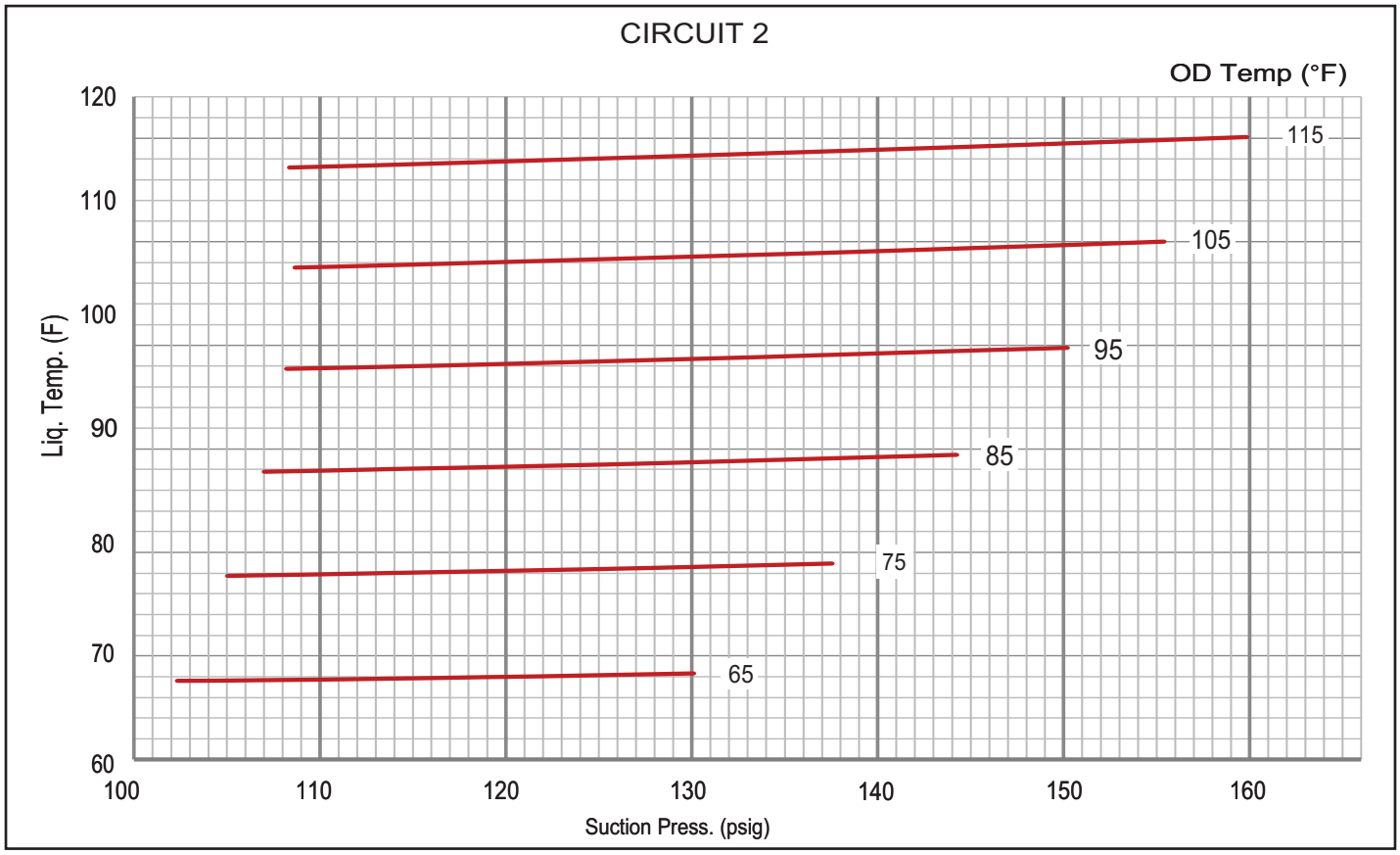
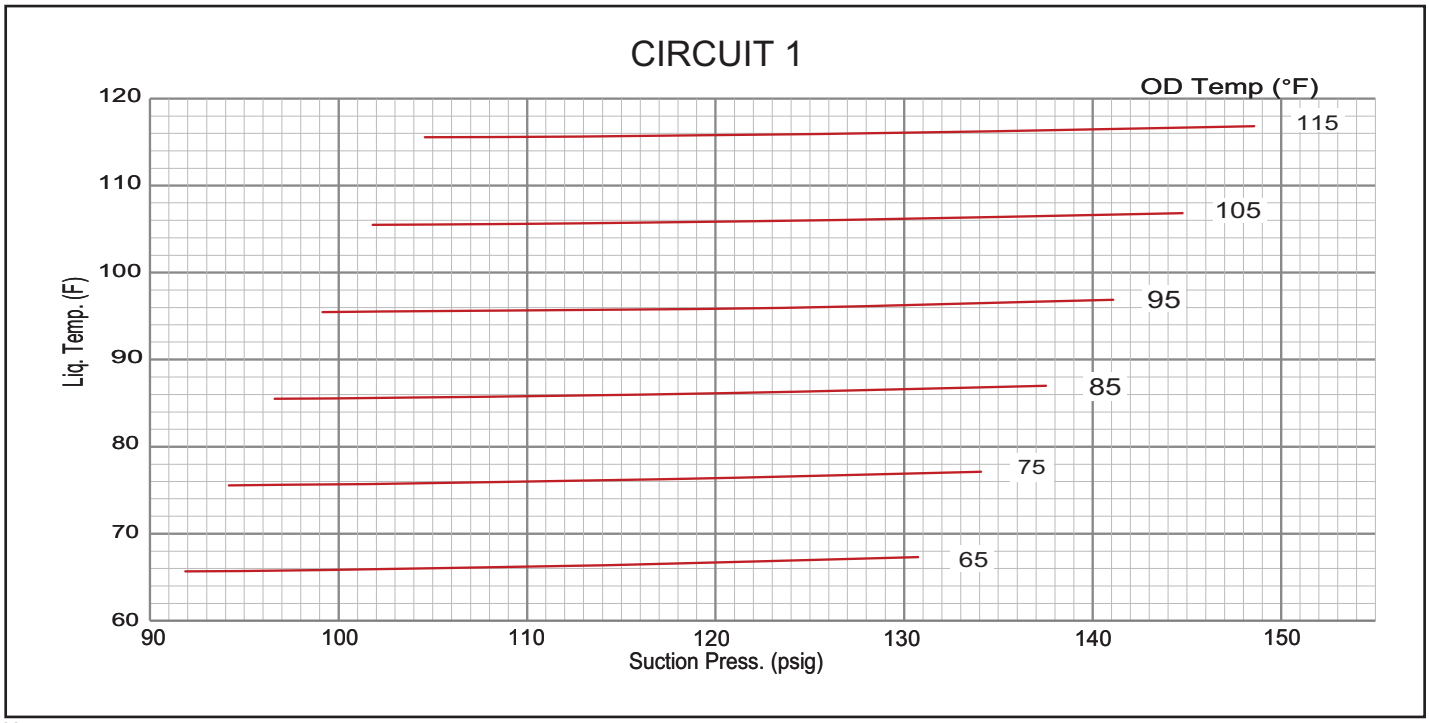


TABLE 13
LGT/LCT 180 NO REHEAT OPERATING PRESSURES - ALL-ALUMINUM OD COIL - 581085-02

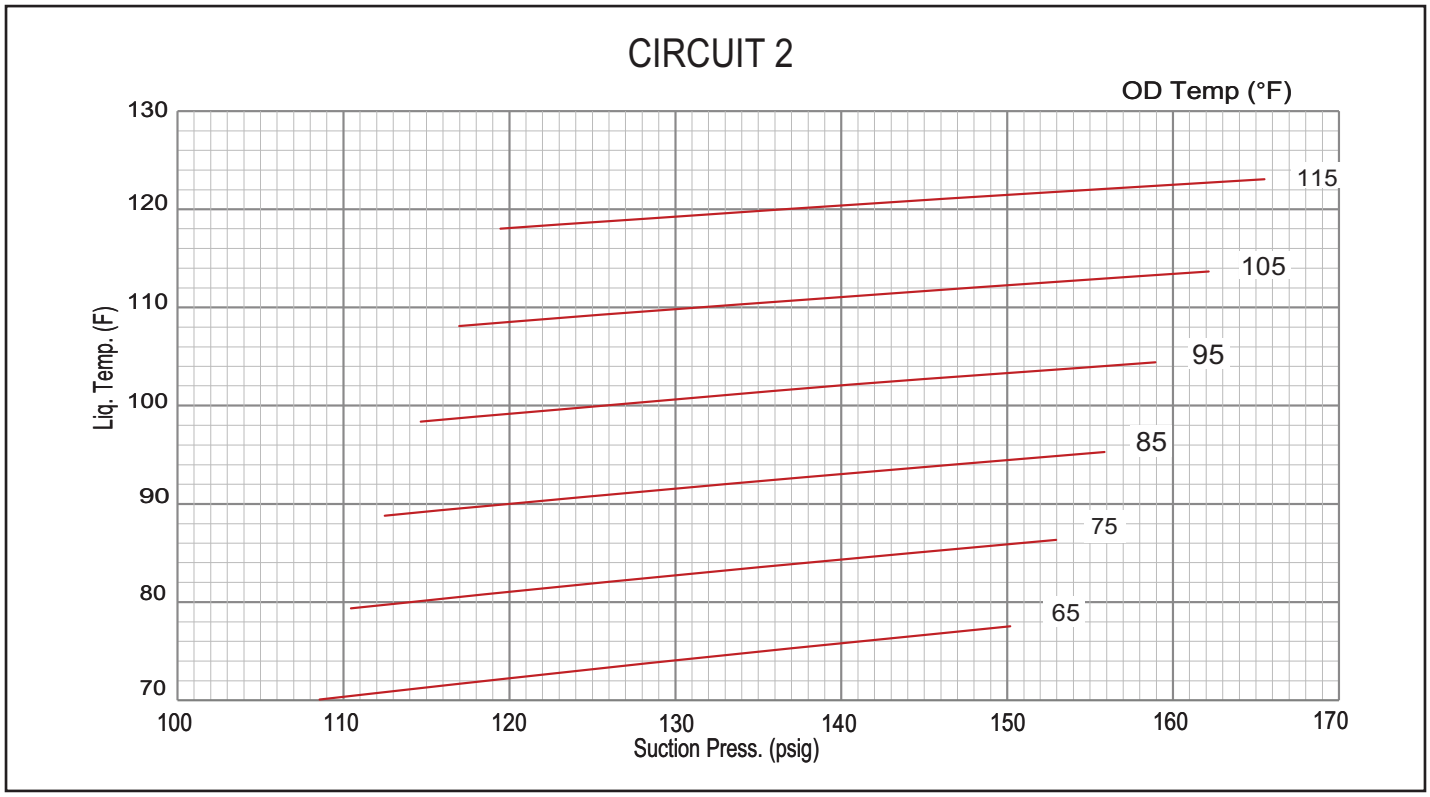
	Outdoor Coil Entering Air Temperature											
	65°F		75°F		85°F		95°F		105°F		115°F	
	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)
Circuit 1	92	208	94	242	97	281	99	324	102	371	105	423
	99	210	102	244	104	283	107	327	110	374	113	426
	114	214	117	248	120	288	124	332	127	379	130	431
	131	217	134	252	138	291	141	335	145	383	149	436
Circuit 2	109	224	110	261	113	303	115	351	117	402	119	459
	116	227	118	264	121	306	123	353	126	405	128	462
	133	232	135	270	138	312	141	360	143	412	146	469
	150	238	153	275	156	318	159	365	162	418	166	475
Circuit 3	94	225	95	263	97	306	99	353	101	404	103	461
	101	229	103	266	105	309	107	356	109	408	111	464
	117	235	119	273	121	315	124	363	127	415	130	471
	133	241	136	279	139	322	142	369	146	421	149	478

LGT/LCT 180 NO REHEAT CHARGING CURVE CIRCUIT 1 - ALL-ALUMINUM OD COIL - 581086-02



V

LGT/LCT 180 NO REHEAT CHARGING CURVE CIRCUIT 2 - ALL-ALUMINUM OD COIL - 581086-02



LGT/LCT 180 NO REHEAT CHARGING CURVE CIRCUIT 3 - ALL-ALUMINUM OD COIL - 581086-02

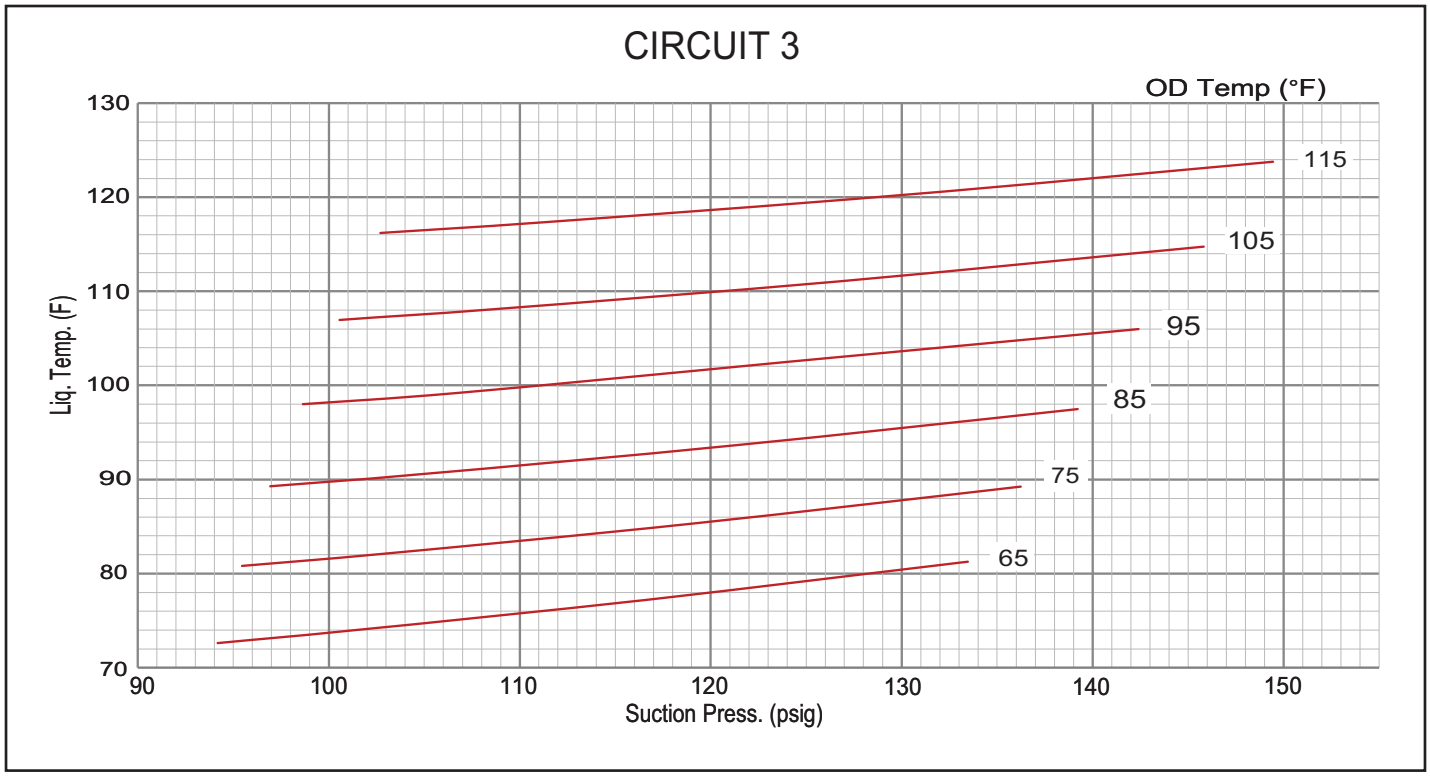
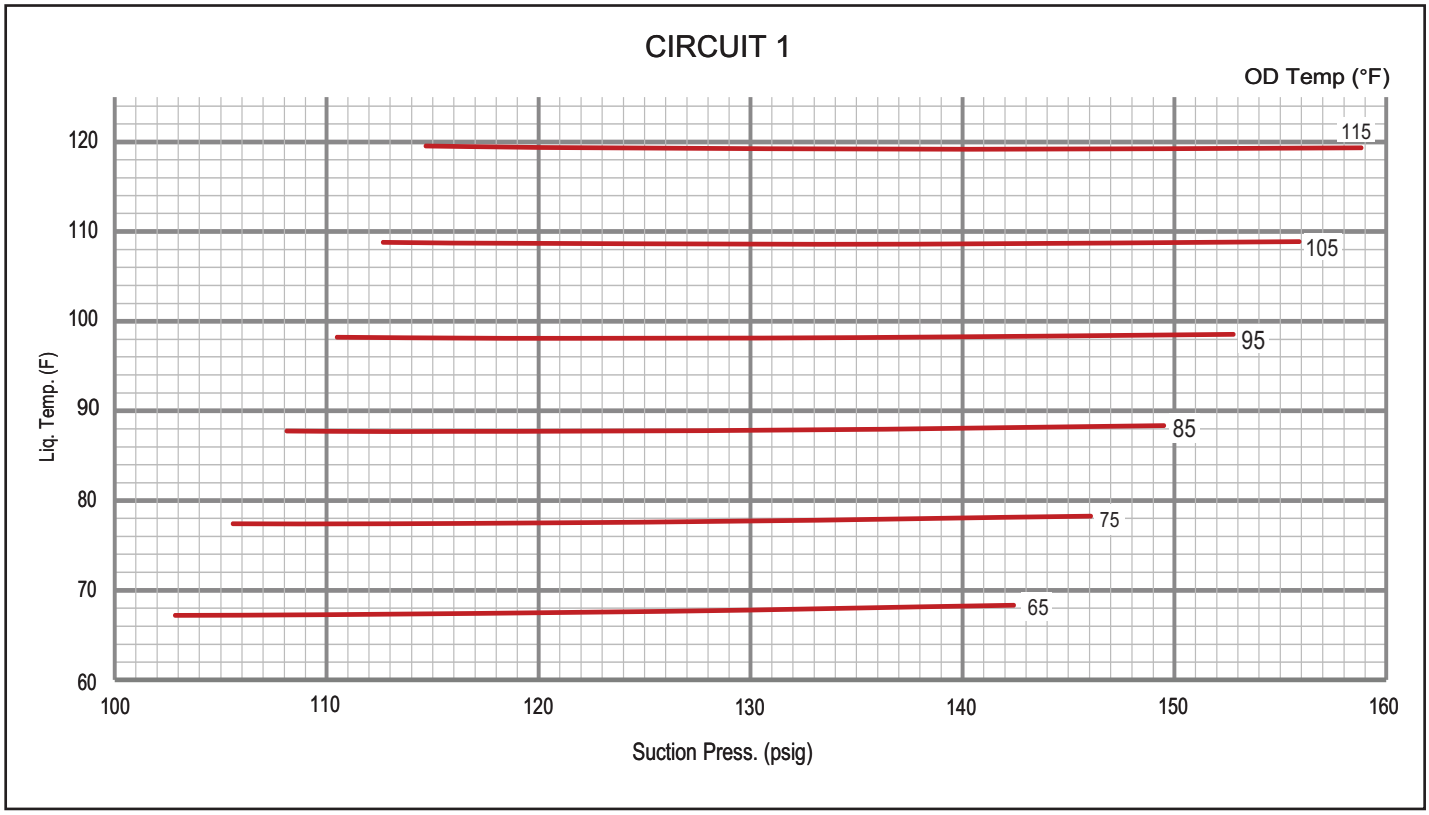


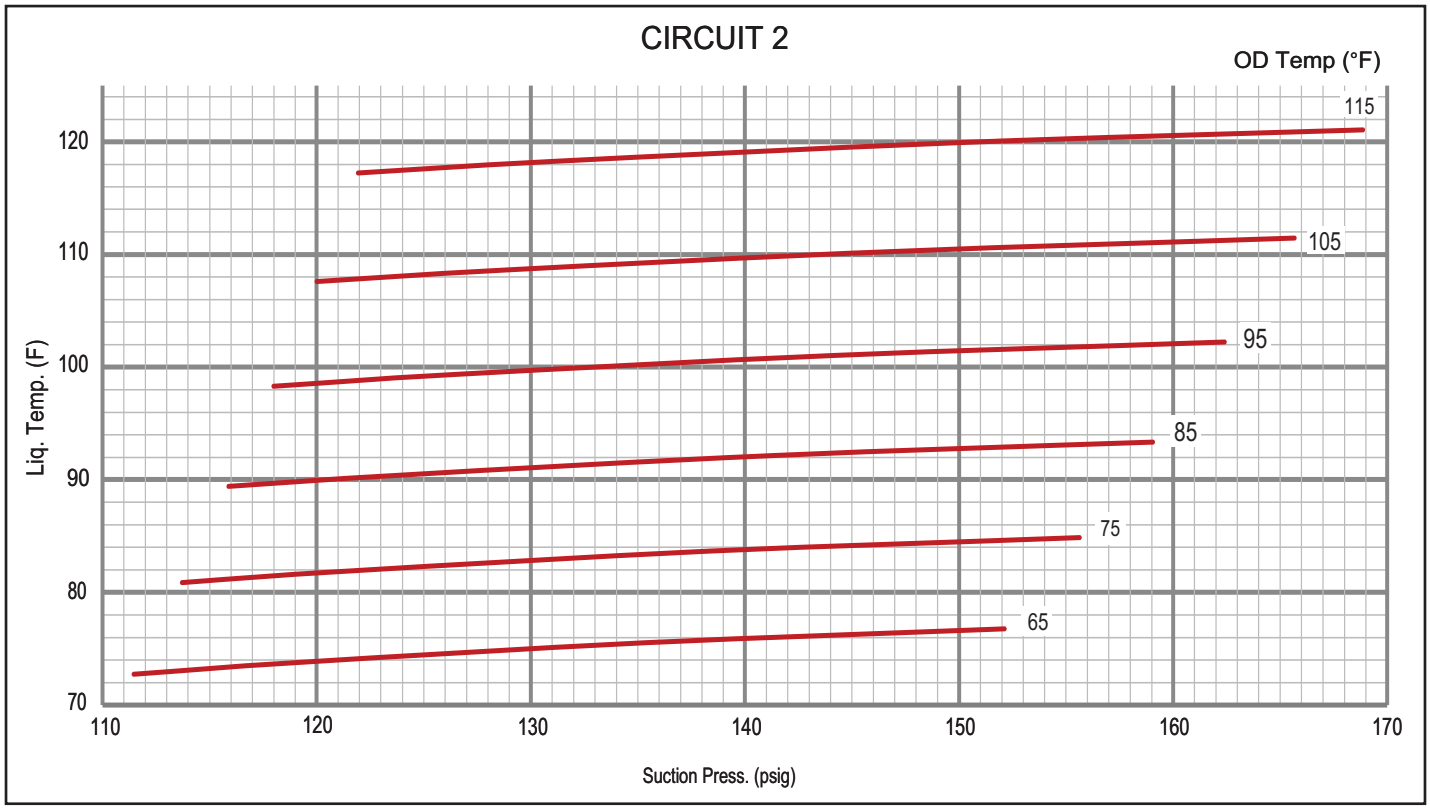
TABLE 14
LGT/LCT 210 NO REHEAT NORMAL OPERATING PRESSURES - ALL-ALUMINUM OD COIL - 581089-02

	Outdoor Coil Entering Air Temperature											
	65°F		75°F		85°F		95°F		105°F		115°F	
	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)
Circuit 1	103	220	106	257	108	300	110	349	113	405	115	466
	110	223	113	259	116	302	118	350	121	405	123	467
	126	228	129	264	132	305	135	353	138	408	140	468
	142	234	146	269	150	310	153	357	156	410	159	470
Circuit 2	111	226	114	264	116	307	118	355	120	408	122	467
	119	229	122	267	124	310	127	358	129	411	131	470
	135	236	138	273	141	316	144	364	147	418	150	476
	152	243	156	281	159	324	162	372	166	426	169	484
Circuit 3	97	221	99	258	101	300	104	347	106	399	108	455
	104	224	107	261	109	303	112	350	114	402	117	459
	120	229	123	266	126	309	129	356	132	408	134	465
	137	234	140	271	144	314	147	362	150	414	153	471
Circuit 4	97	224	99	262	101	305	103	352	105	405	107	462
	104	227	106	265	109	308	111	356	113	408	116	466
	120	233	123	272	125	315	128	363	131	415	133	473
	137	240	140	279	143	322	146	370	149	423	152	480

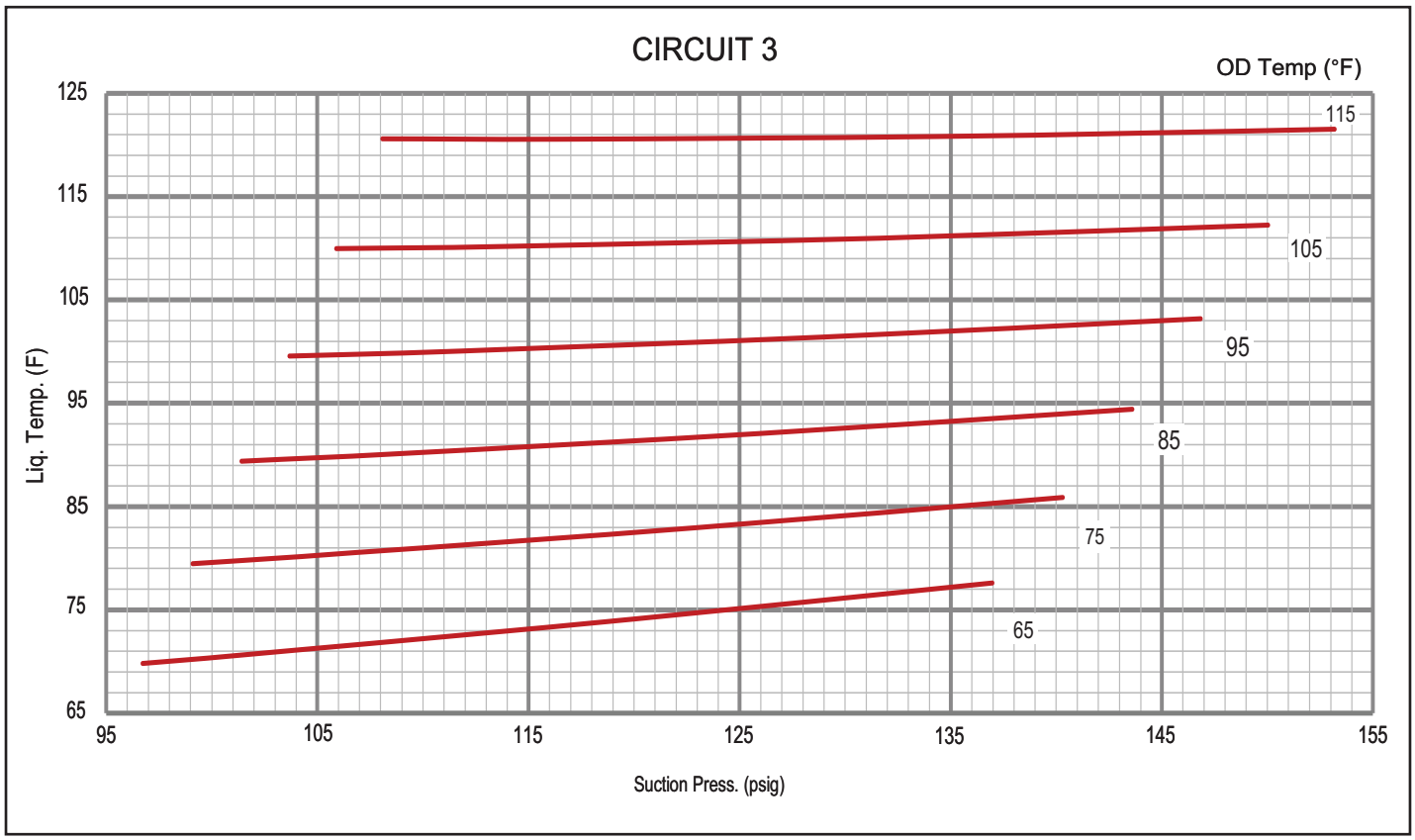
LGT/LCT 210 NO REHEAT CHARGING CURVE CIRCUIT 1 - ALL-ALUMINUM OD COIL - 581090-02



LGT/LCT 210 NO REHEAT CHARGING CURVE CIRCUIT 2 - ALL-ALUMINUM OD COIL - 581090-02



LGT/LCT 210 NO REHEAT CHARGING CURVE CIRCUIT 3 - ALL-ALUMINUM OD COIL - 581090-02



LGT/LCT 210 NO REHEAT CHARGING CURVE CIRCUIT 4 - ALL-ALUMINUM OD COIL - 581090-02

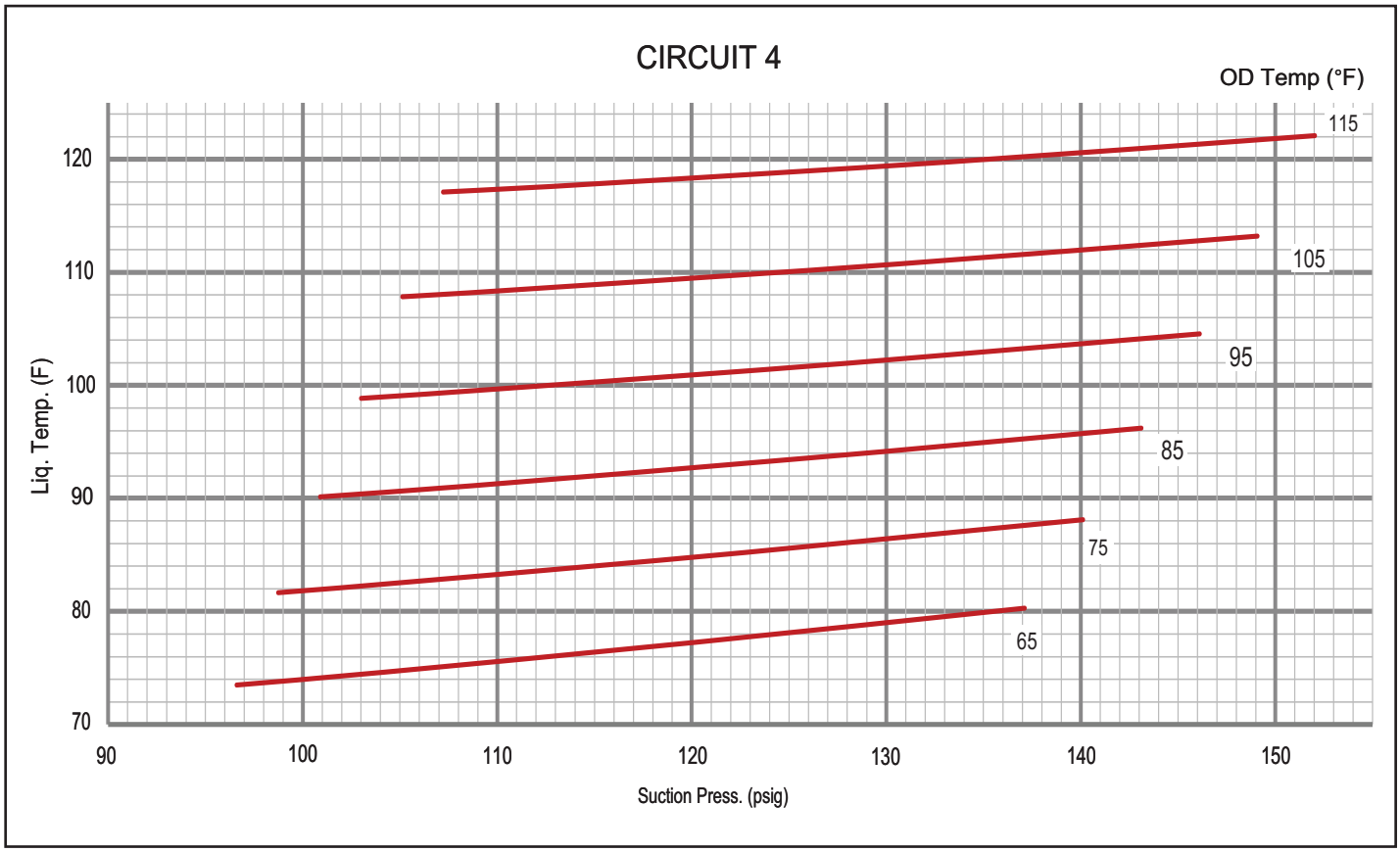
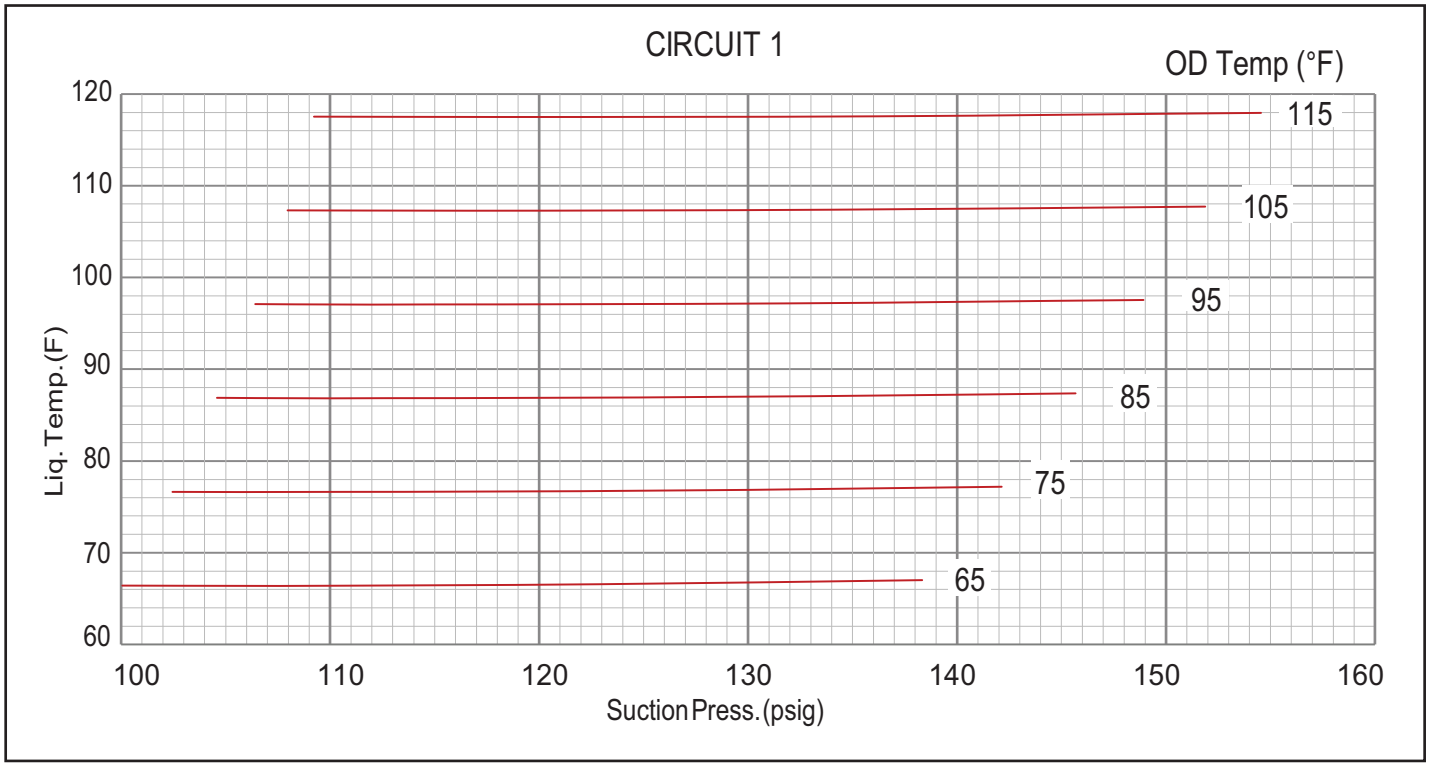


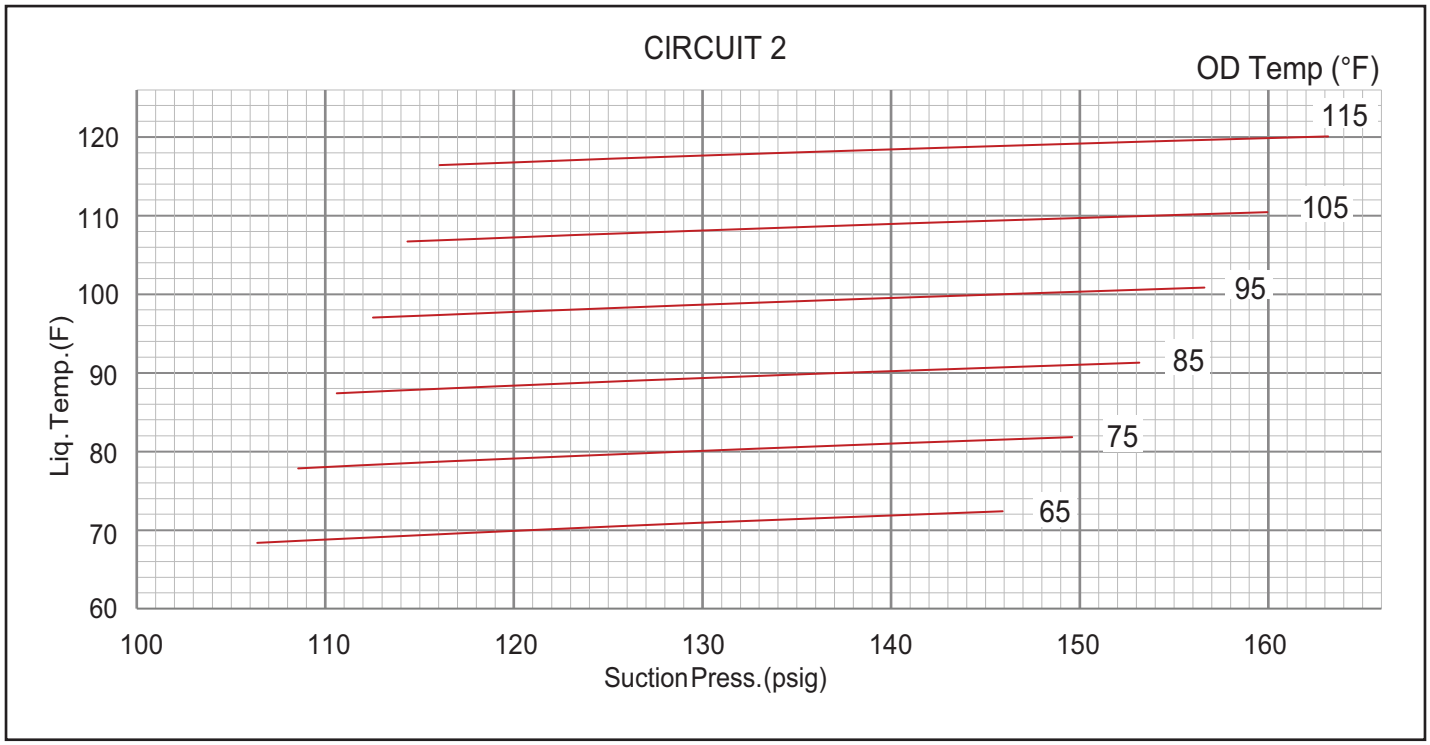
TABLE 15
LGT/LCT 240 NO REHEAT NORMAL OPERATING PRESSURES - ALL-ALUMINUM OD COIL - 581093-02

	Outdoor Coil Entering Air Temperature											
	65°F		75°F		85°F		95°F		105°F		115°F	
	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)
Circuit 1	100	223	102	259	105	301	106	347	108	398	109	454
	108	225	110	261	113	303	115	349	117	400	118	456
	123	230	126	266	129	308	132	355	134	405	136	461
	138	236	142	273	146	315	149	361	152	412	155	468
Circuit 2	106	228	109	265	111	307	113	353	114	403	116	457
	114	231	116	268	119	310	121	356	123	406	125	461
	130	237	133	275	136	317	139	363	141	414	144	469
	146	244	150	282	153	325	157	372	160	423	163	478
Circuit 3	92	224	93	261	95	303	97	349	98	399	100	453
	99	226	101	264	103	306	105	352	107	402	109	457
	114	232	117	270	119	313	122	358	124	409	127	464
	131	239	134	277	136	320	139	366	142	417	146	472
Circuit 4	94	223	96	260	98	302	99	348	101	399	102	454
	100	226	103	263	105	305	107	351	109	402	110	457
	115	232	118	269	121	311	124	358	126	409	128	465
	130	239	134	277	137	319	141	366	144	417	147	473

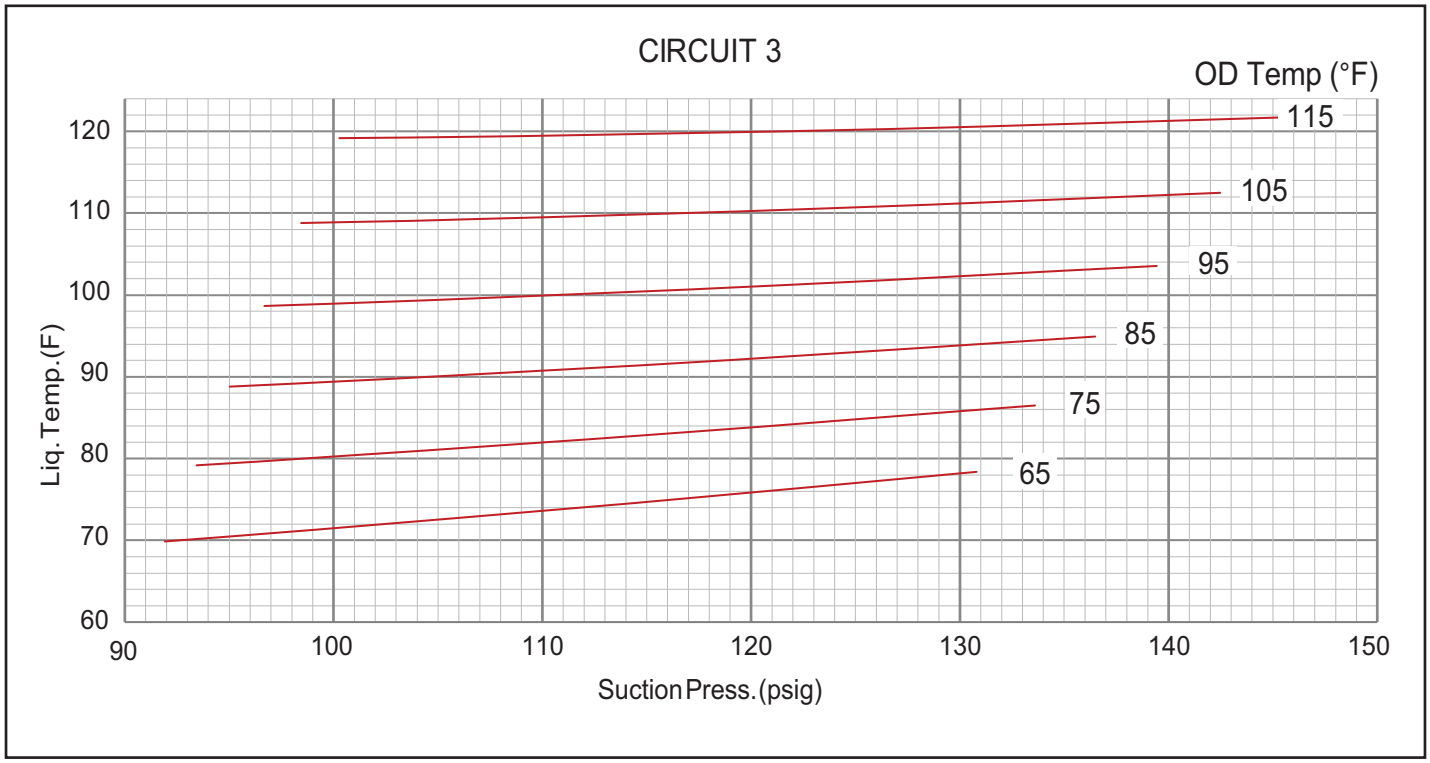
LGT/LCT 240 NO REHEAT CHARGING CURVE CIRCUIT 1 - ALL-ALUMINUM OD COIL - 581094-02



LGT/LCT 240 NO REHEAT CHARGING CURVE CIRCUIT 2 - ALL-ALUMINUM OD COIL - 581094-02



LGT/LCT 240 NO REHEAT CHARGING CURVE CIRCUIT 3 - ALL-ALUMINUM OD COIL - 581094-02



LGT/LCT 240 NO REHEAT CHARGING CURVE CIRCUIT 4 - ALL-ALUMINUM OD COIL - 581094-02

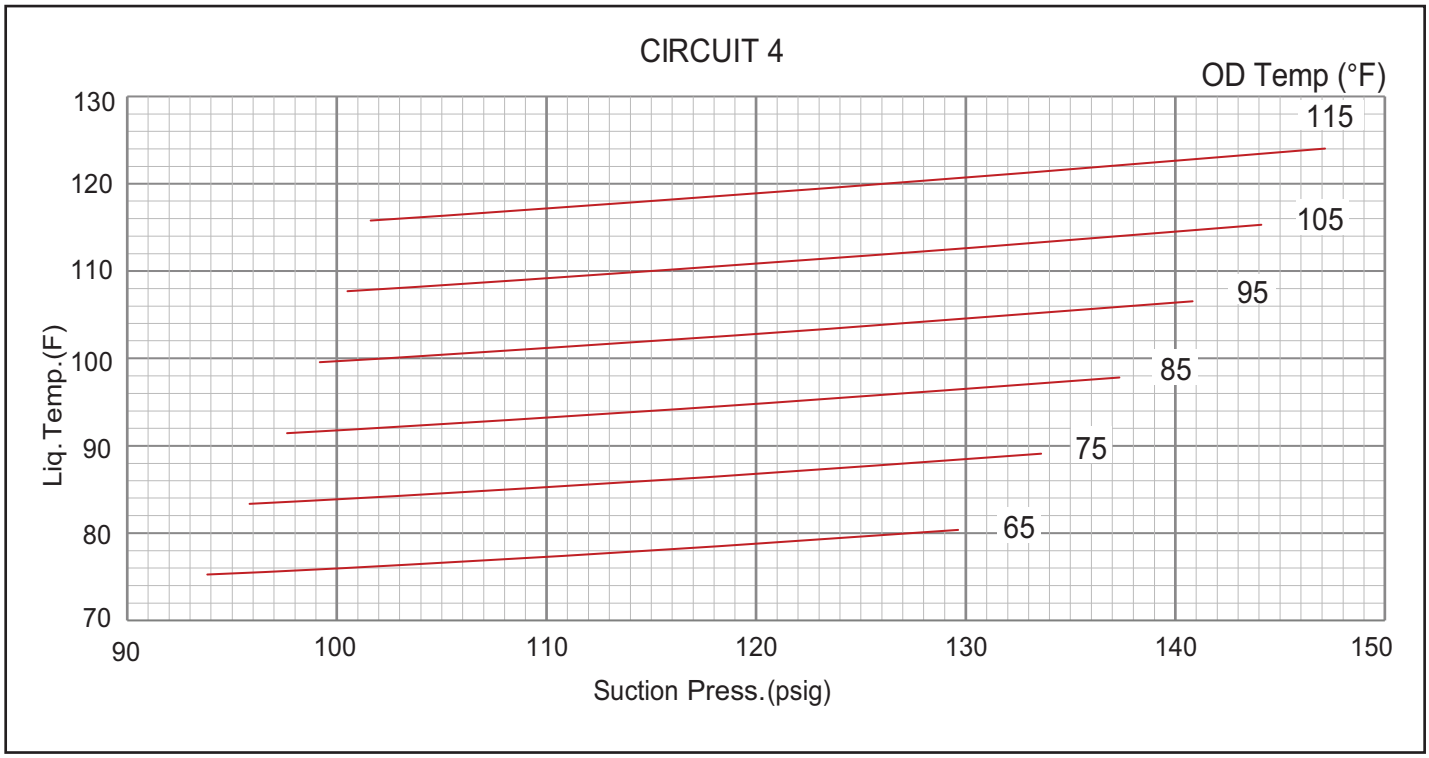
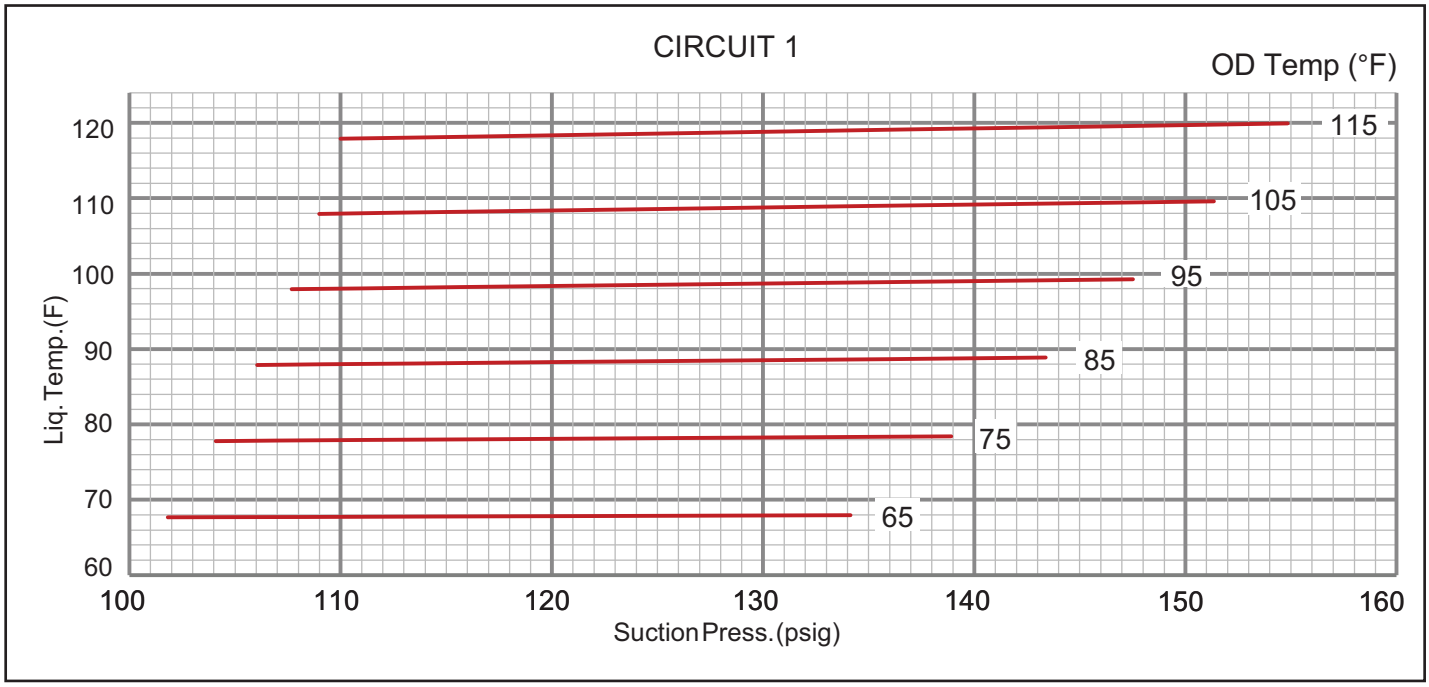


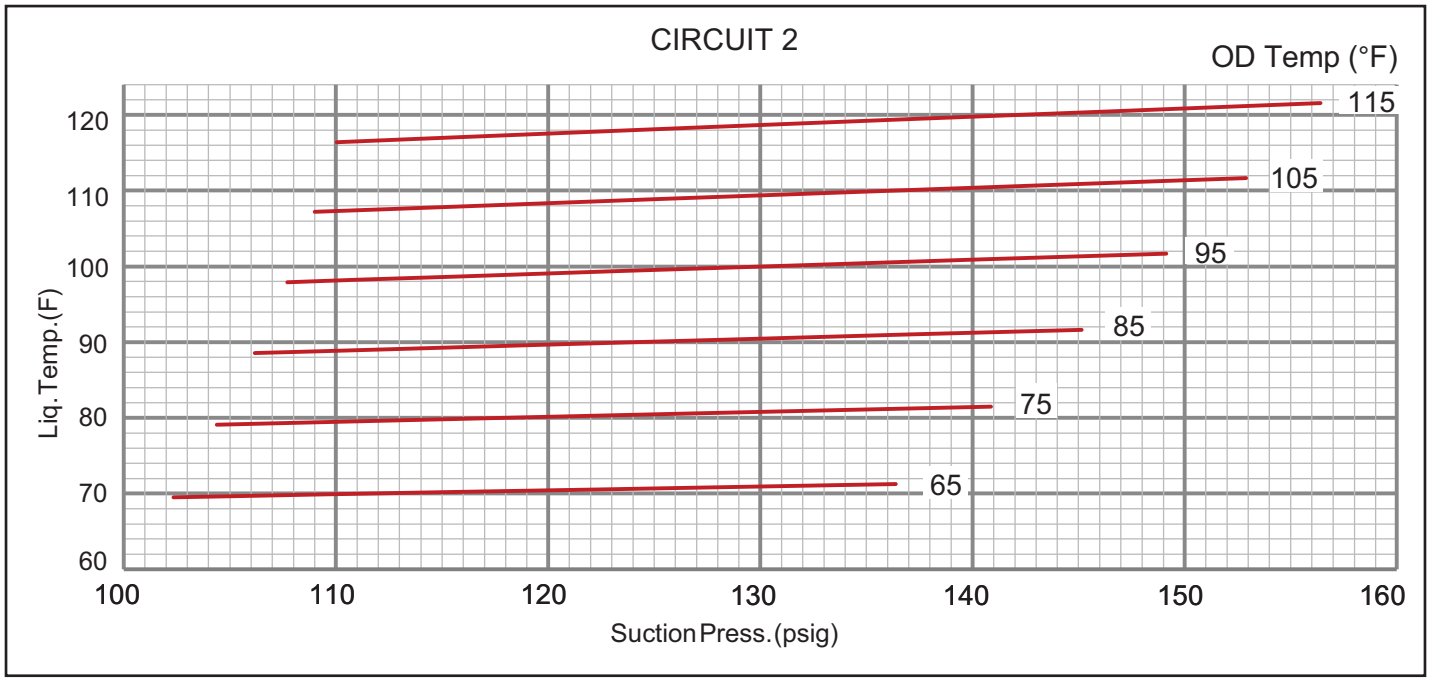
TABLE 16
LGT/LCT 300 NO REHEAT NORMAL OPERATING PRESSURES - ALL-ALUMINUM OD COIL - 581097-02

	Outdoor Coil Entering Air Temperature											
	65°F		75°F		85°F		95°F		105°F		115°F	
	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)
Circuit 1	102	229	104	267	106	309	108	356	109	408	110	465
	108	232	111	269	113	311	116	359	117	411	119	469
	121	237	125	275	128	317	132	365	134	418	137	476
	134	243	139	281	143	324	148	373	151	426	155	484
Circuit 2	102	237	104	275	106	318	108	365	109	418	110	476
	109	241	111	278	114	321	116	369	118	422	119	480
	122	248	126	286	129	329	132	376	135	430	137	489
	136	257	141	295	145	339	149	387	153	440	156	499
Circuit 3	86	234	88	272	90	315	92	363	93	416	95	475
	92	237	94	275	96	318	99	366	101	419	103	478
	105	244	108	282	111	324	114	370	117	426	120	485
	118	251	122	289	126	332	130	380	134	433	138	492
Circuit 4	90	237	92	275	94	319	96	368	98	422	100	481
	97	240	99	279	102	323	104	373	107	427	109	487
	108	248	112	288	115	333	120	384	122	439	126	499
	117	257	122	298	127	344	132	395	136	451	140	512

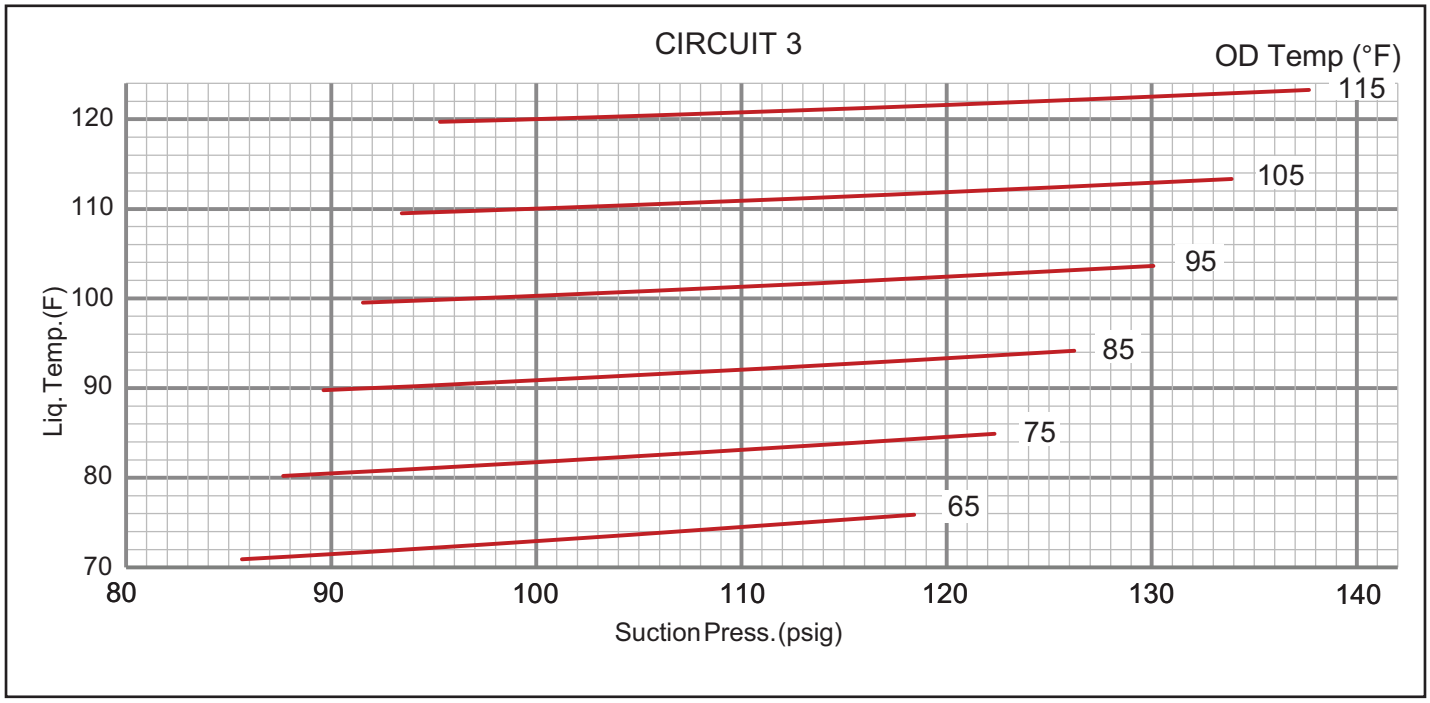
LGT/LCT 300 NO REHEAT CHARGING CURVE CIRCUIT 1 - ALL-ALUMINUM OD COIL - 581098-02



LGT/LCT 300 NO REHEAT CHARGING CURVE CIRCUIT 2 - ALL-ALUMINUM OD COIL - 581098-02



LGT/LCT 300 NO REHEAT CHARGING CURVE CIRCUIT 3 - ALL-ALUMINUM OD COIL - 581098-02



LGT/LCT 300 NO REHEAT CHARGING CURVE CIRCUIT 4 - ALL-ALUMINUM OD COIL - 581098-02

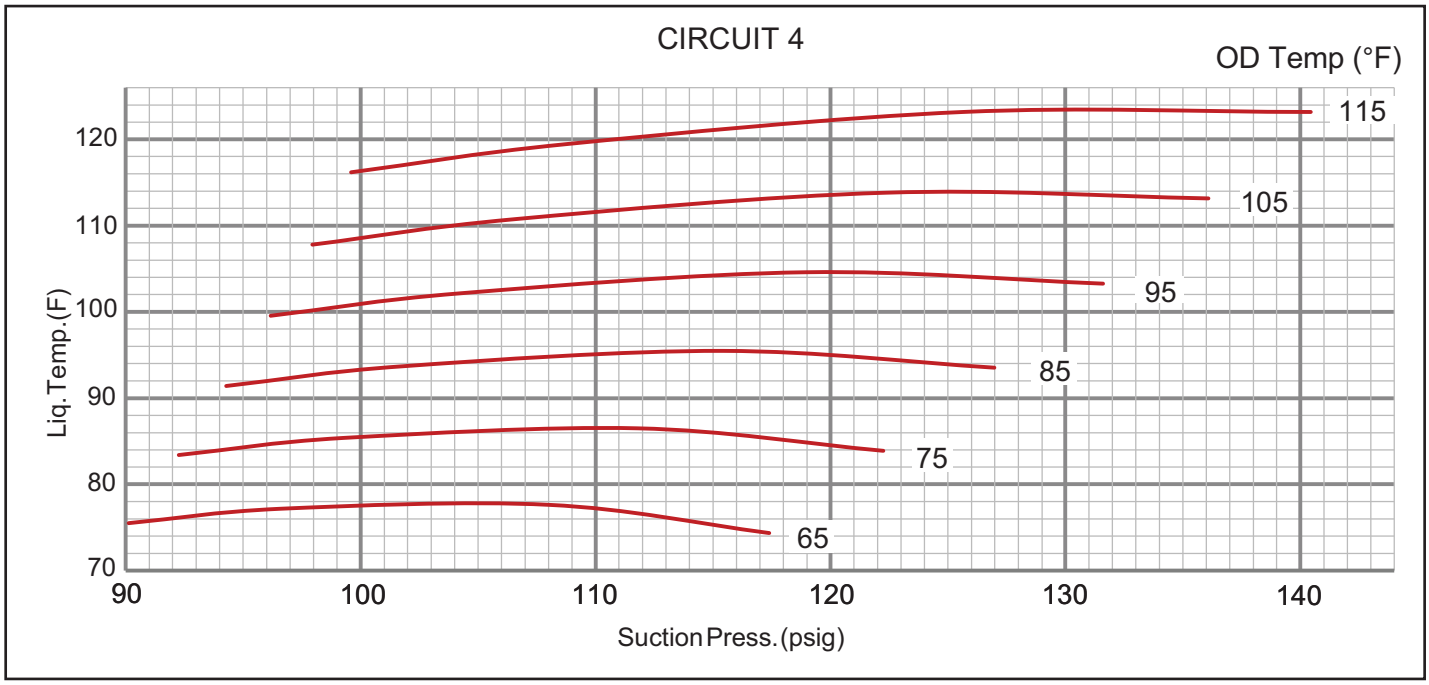
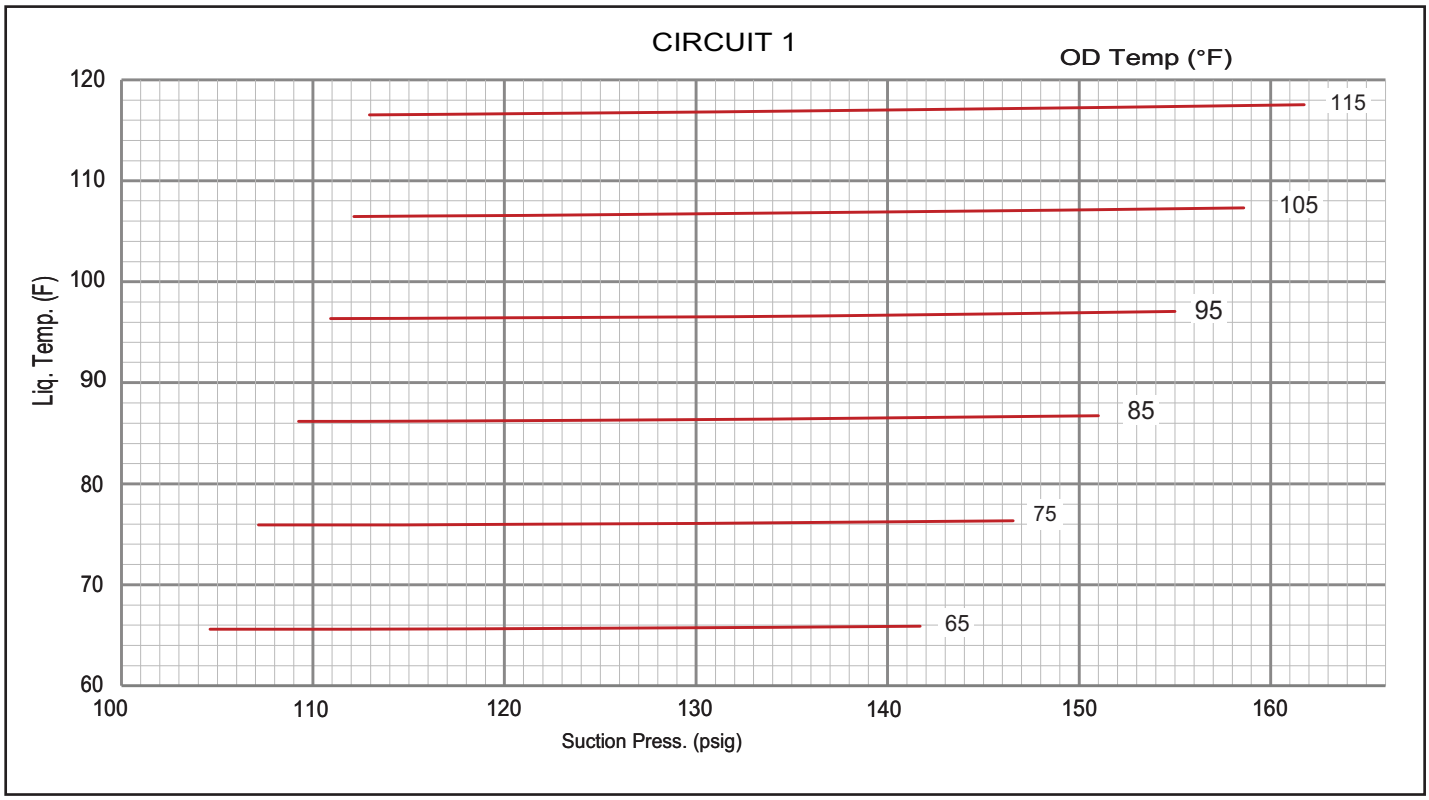


TABLE 17
LGT/LCT 156 REHEAT OPERATING PRESSURES - ALL-ALUMINUM OD COIL - 581083-02

	Outdoor Coil Entering Air Temperature											
	65°F		75°F		85°F		95°F		105°F		115°F	
	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)
Circuit 1	105	230	107	266	109	308	111	356	112	410	113	469
	112	233	115	268	117	310	119	357	121	410	122	469
	126	240	130	275	134	315	136	363	140	413	142	471
	142	250	147	284	151	323	155	368	159	419	162	475
Circuit 2	102	230	105	267	107	309	108	356	109	408	108	464
	108	233	112	270	114	312	117	359	118	411	119	468
	119	240	124	277	129	320	134	360	137	419	139	475
	130	247	138	285	144	328	150	375	155	427	160	484

LGT/LCT 156 REHEAT CHARGING CURVE CIRCUIT 1 - ALL-ALUMINUM OD COIL - 581084-02



LGT/LCT 156 REHEAT CHARGING CURVE CIRCUIT 2 - ALL-ALUMINUM OD COIL - 581084-02

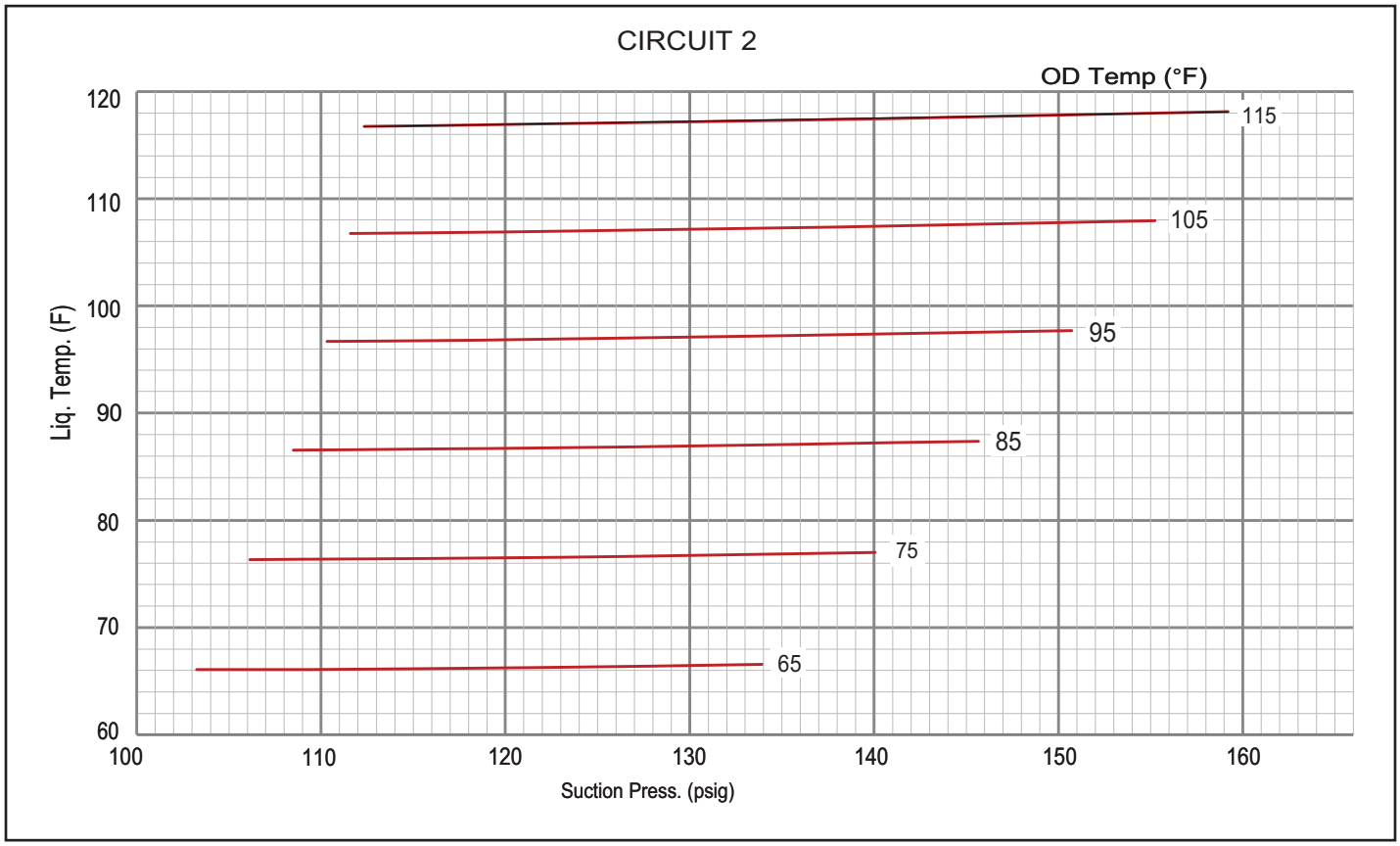
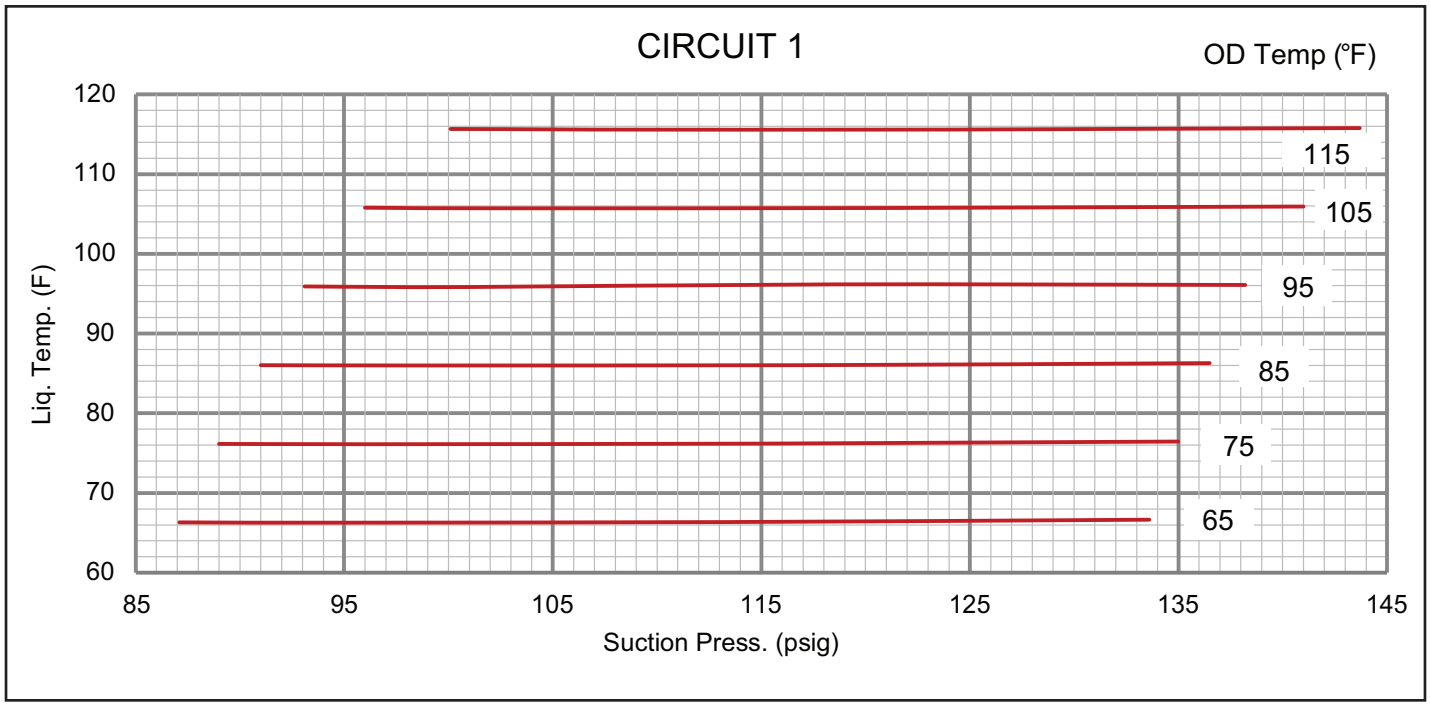


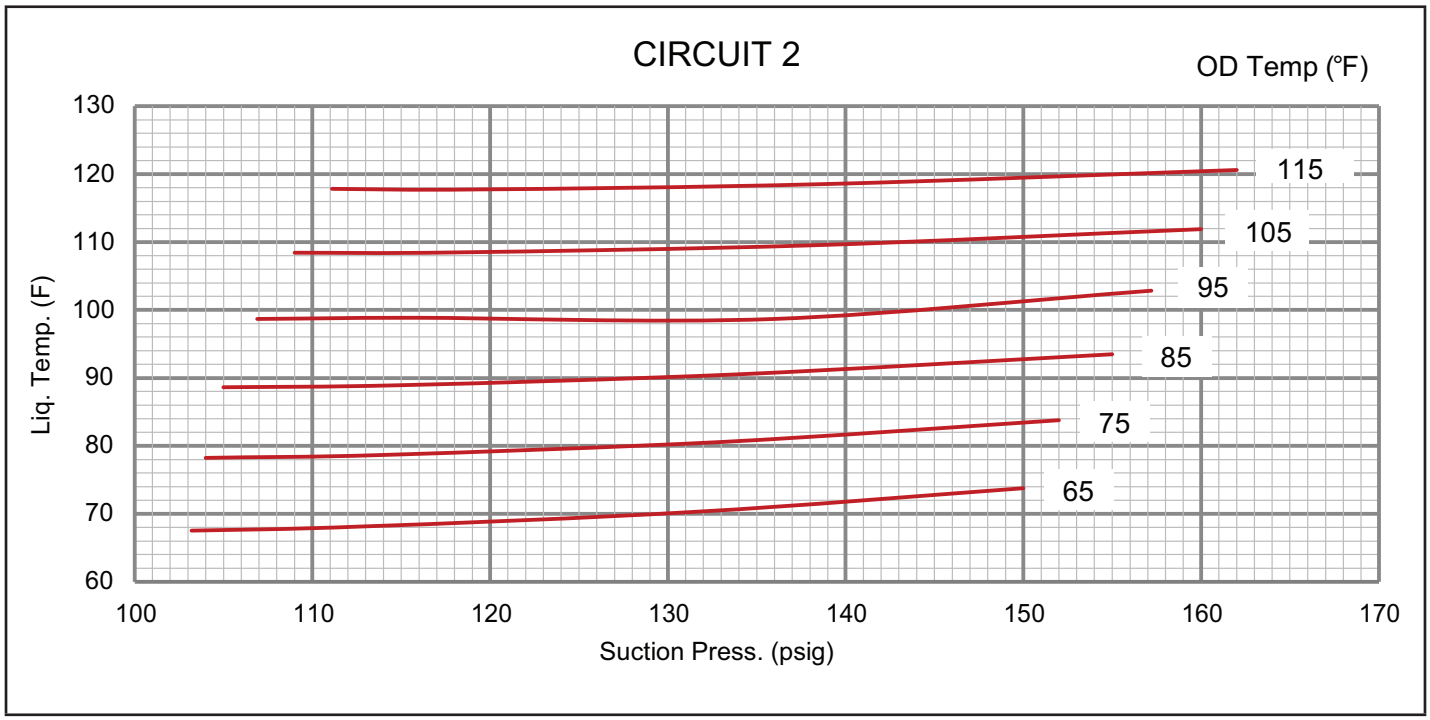
TABLE 18
LGT/LCT 180 REHEAT OPERATING PRESSURES - ALL-ALUMINUM OD COIL - 581361-01

	Outdoor Coil Entering Air Temperature											
	65°F		75°F		85°F		95°F		105°F		115°F	
	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)
Circuit 1	87	223	89	262	91	309	93	364	96	421	100	522
	95	223	96	262	98	309	101	361	103	418	107	503
	113	226	115	265	117	312	119	355	121	412	124	479
	134	230	135	269	137	316	138	352	141	409	144	466
Circuit 2	103	236	104	275	105	322	107	378	109	435	111	536
	113	239	114	278	115	325	116	375	118	432	119	525
	132	246	133	285	134	332	136	377	138	434	139	504
	150	254	152	293	155	340	157	385	160	442	162	496
Circuit 3	94	228	96	267	98	314	100	352	102	409	105	457
	103	231	105	270	106	317	108	350	110	407	113	462
	120	242	122	281	124	328	127	363	128	420	131	470
	135	246	138	285	141	332	146	371	149	428	152	477

LGT/LCT 180 REHEAT CHARGING CURVE CIRCUIT 1 - ALL-ALUMINUM OD COIL - 581362-01



LGT/LCT 180 REHEAT CHARGING CURVE CIRCUIT 2 - ALL-ALUMINUM OD COIL - 581362-01



LGT/LCT 180 REHEAT CHARGING CURVE CIRCUIT 3 - ALL-ALUMINUM OD COIL - 581362-01

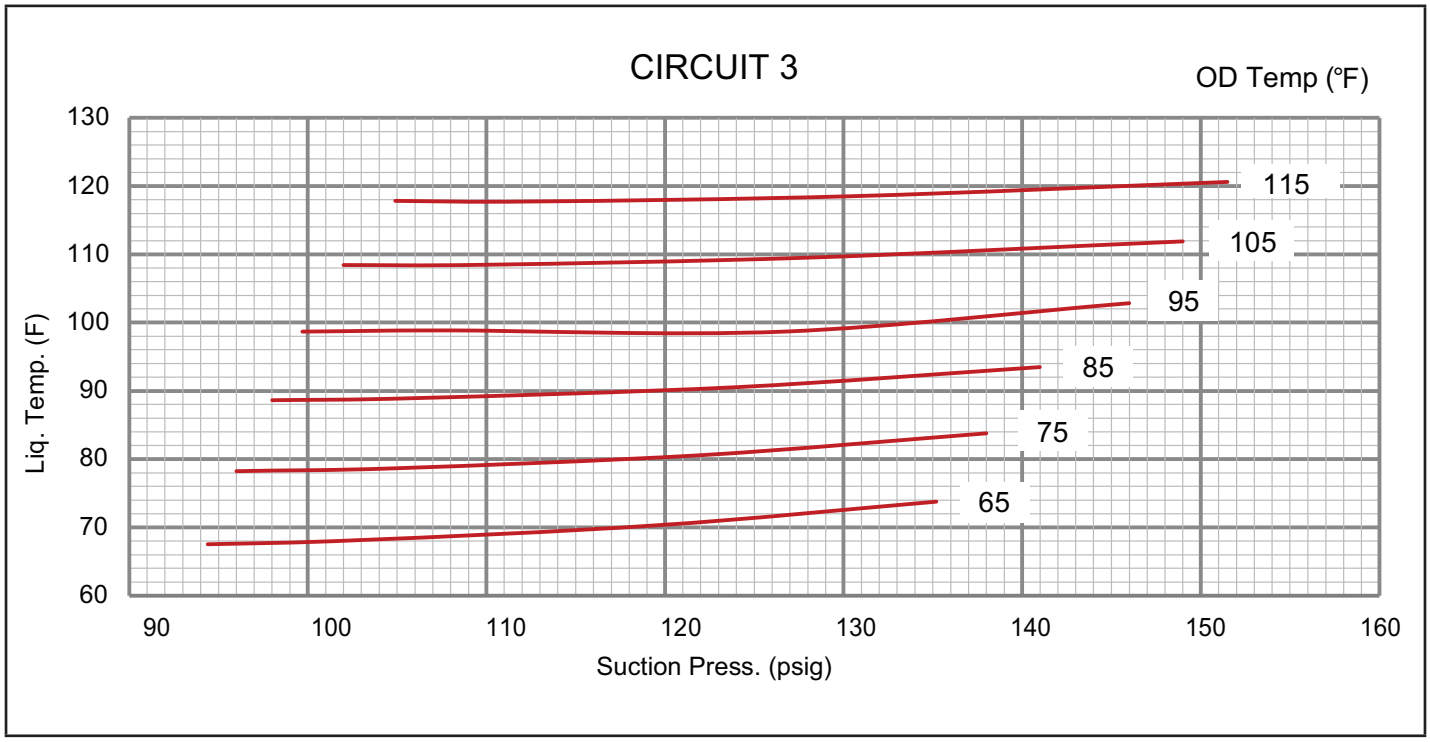
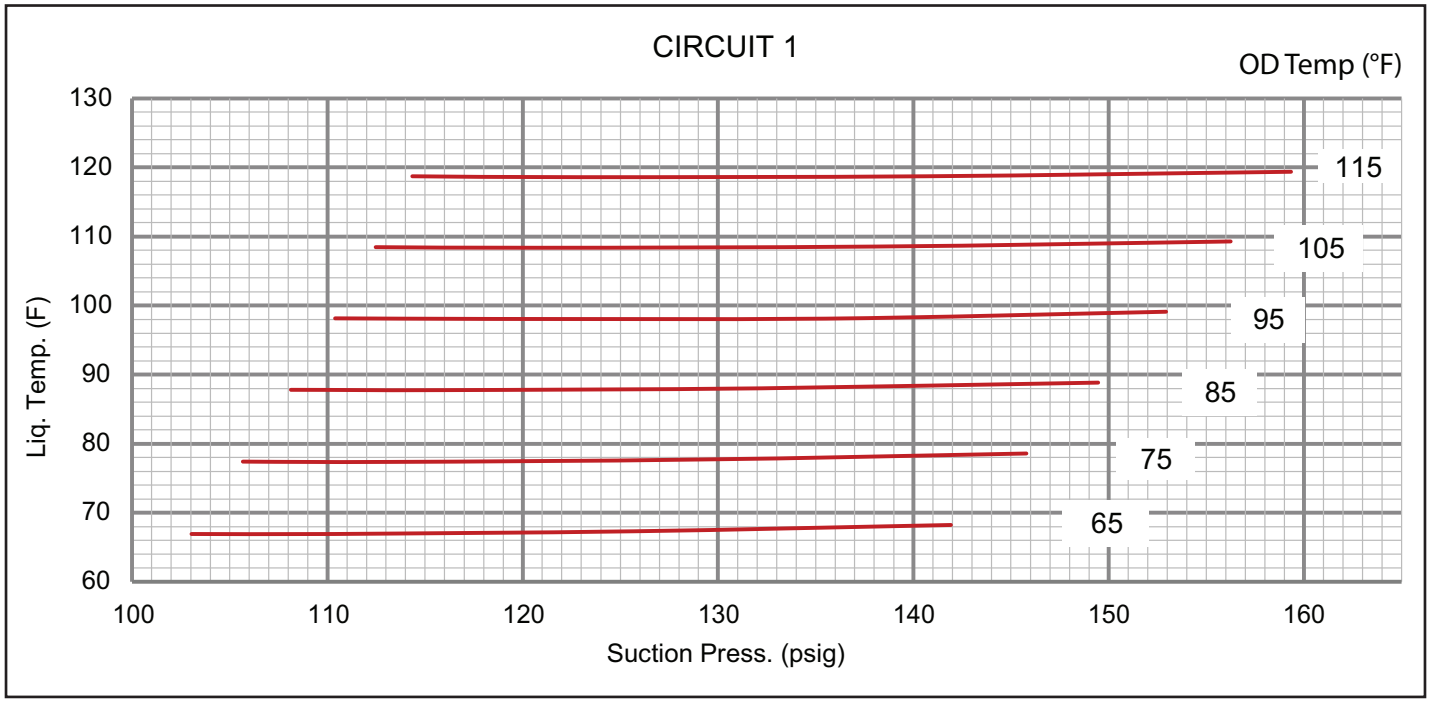


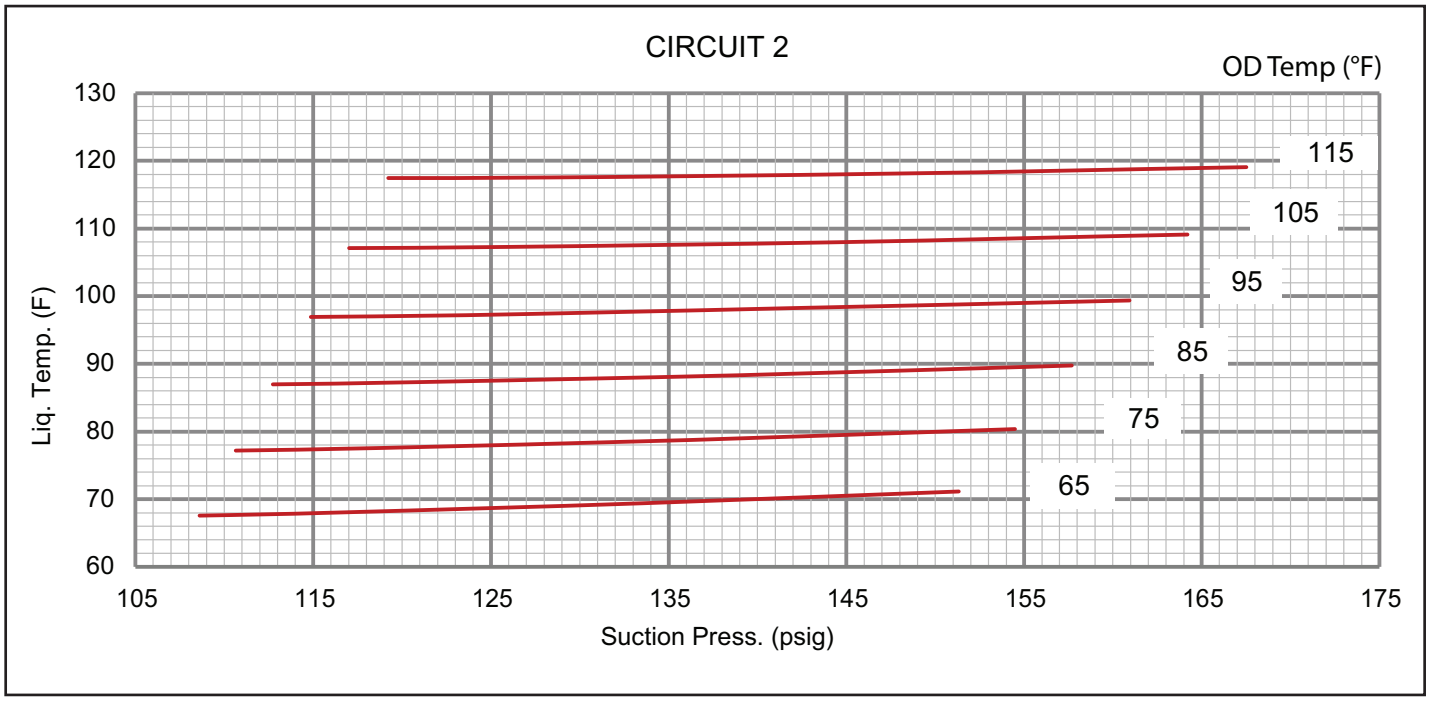
TABLE 19
LGT/LCT 210 REHEAT NORMAL OPERATING PRESSURES - ALL-ALUMINUM OD COIL - 581091-02

	Outdoor Coil Entering Air Temperature											
	65°F		75°F		85°F		95°F		105°F		115°F	
	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)
Circuit 1	103	226	106	262	108	303	110	349	112	401	114	458
	110	230	113	266	116	307	118	353	121	405	123	462
	126	237	129	272	132	313	136	360	138	411	141	468
	142	242	146	277	149	318	153	364	156	416	159	473
Circuit 2	109	236	111	273	113	315	115	362	117	413	119	469
	117	239	119	276	121	318	124	365	126	417	128	473
	134	247	136	285	139	328	142	374	145	427	147	484
	151	258	154	297	158	340	161	388	164	441	168	498
Circuit 3	96	222	98	259	100	300	102	346	104	396	107	451
	103	224	105	261	107	303	110	349	112	400	115	455
	119	229	122	267	124	309	126	355	129	407	132	463
	137	235	140	273	142	316	145	364	148	416	151	473
Circuit 4	99	223	101	260	103	303	105	350	108	402	110	459
	106	226	108	263	111	306	113	353	116	406	118	463
	121	231	124	270	127	313	130	359	133	414	136	472
	138	237	141	276	145	320	148	369	151	423	154	481

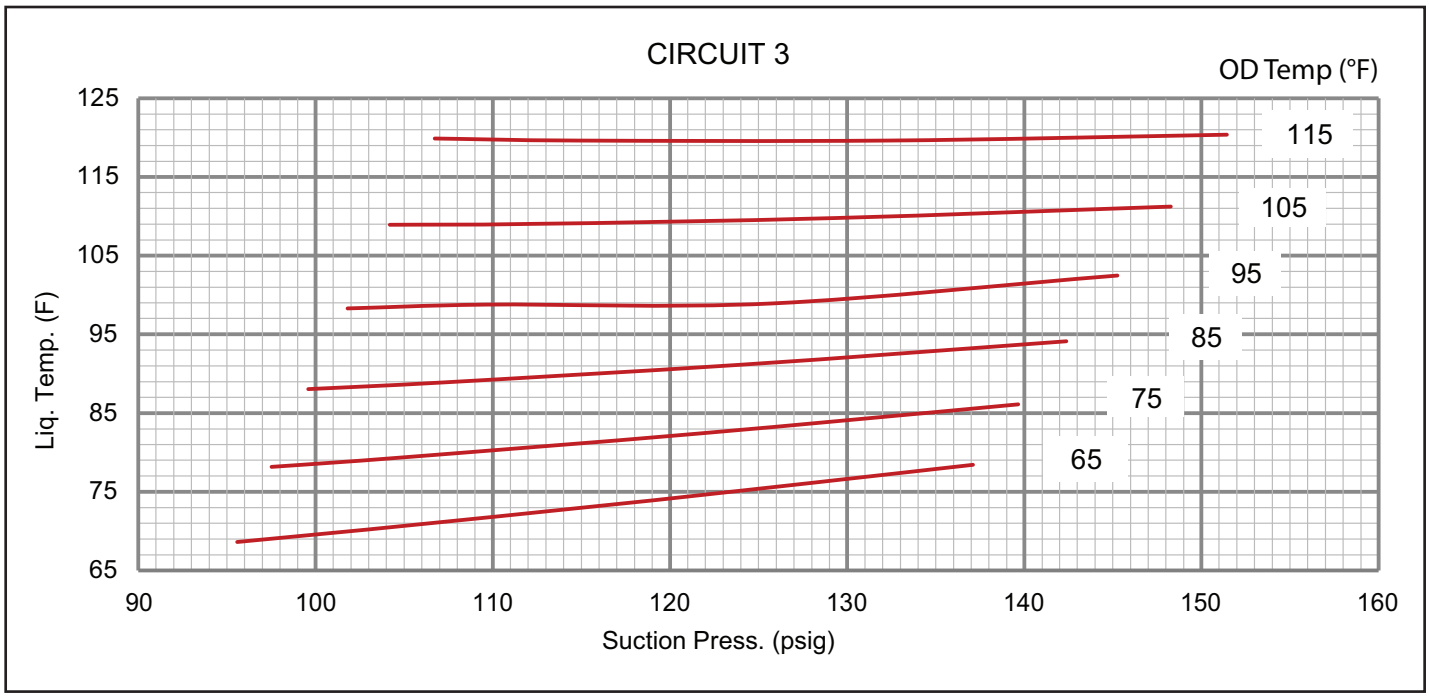
LGT/LCT 210 REHEAT CHARGING CURVE CIRCUIT 1 - ALL-ALUMINUM OD COIL - 581092-02



LGT/LCT 210 REHEAT CHARGING CURVE CIRCUIT 2 - ALL-ALUMINUM OD COIL - 581092-02



LGT/LCT 210 REHEAT CHARGING CURVE CIRCUIT 3 - ALL-ALUMINUM OD COIL - 581092-02



LGT/LCT 210 REHEAT CHARGING CURVE CIRCUIT 4 - ALL-ALUMINUM OD COIL - 581092-02

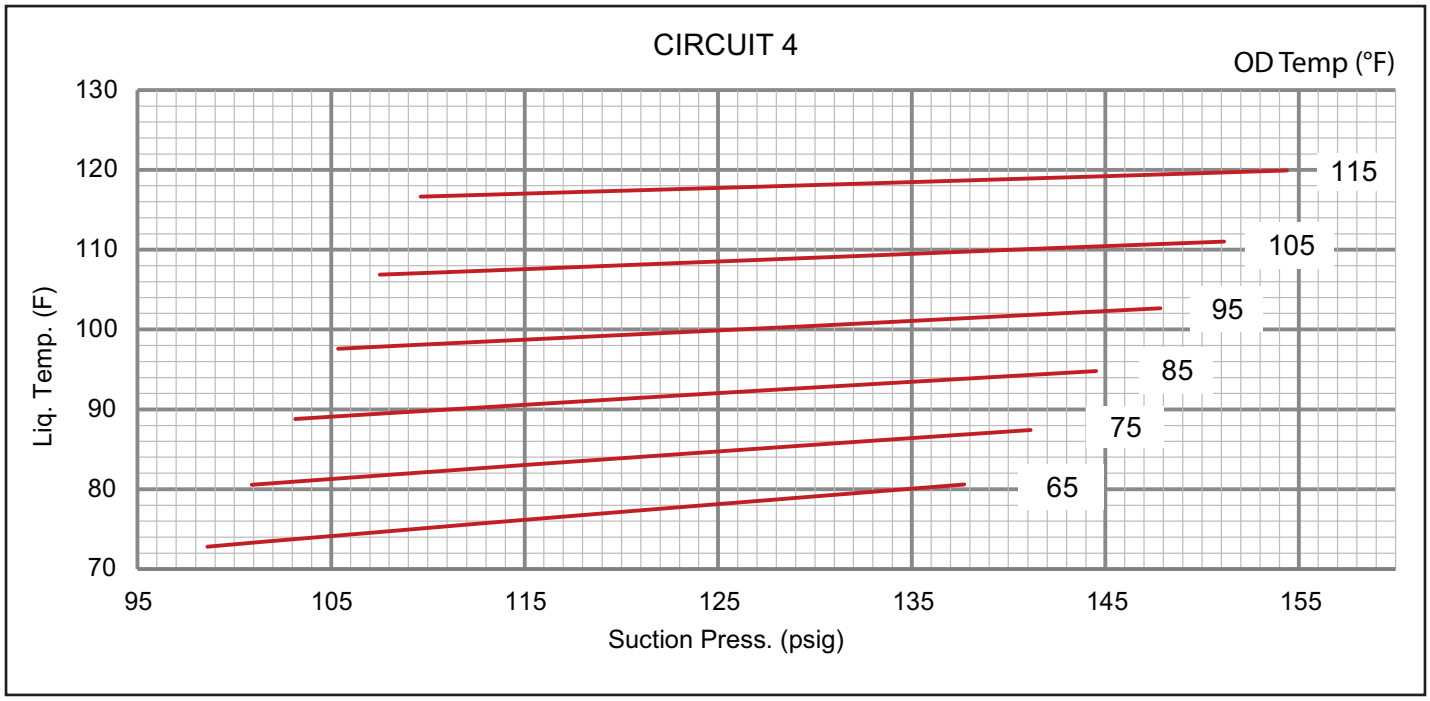
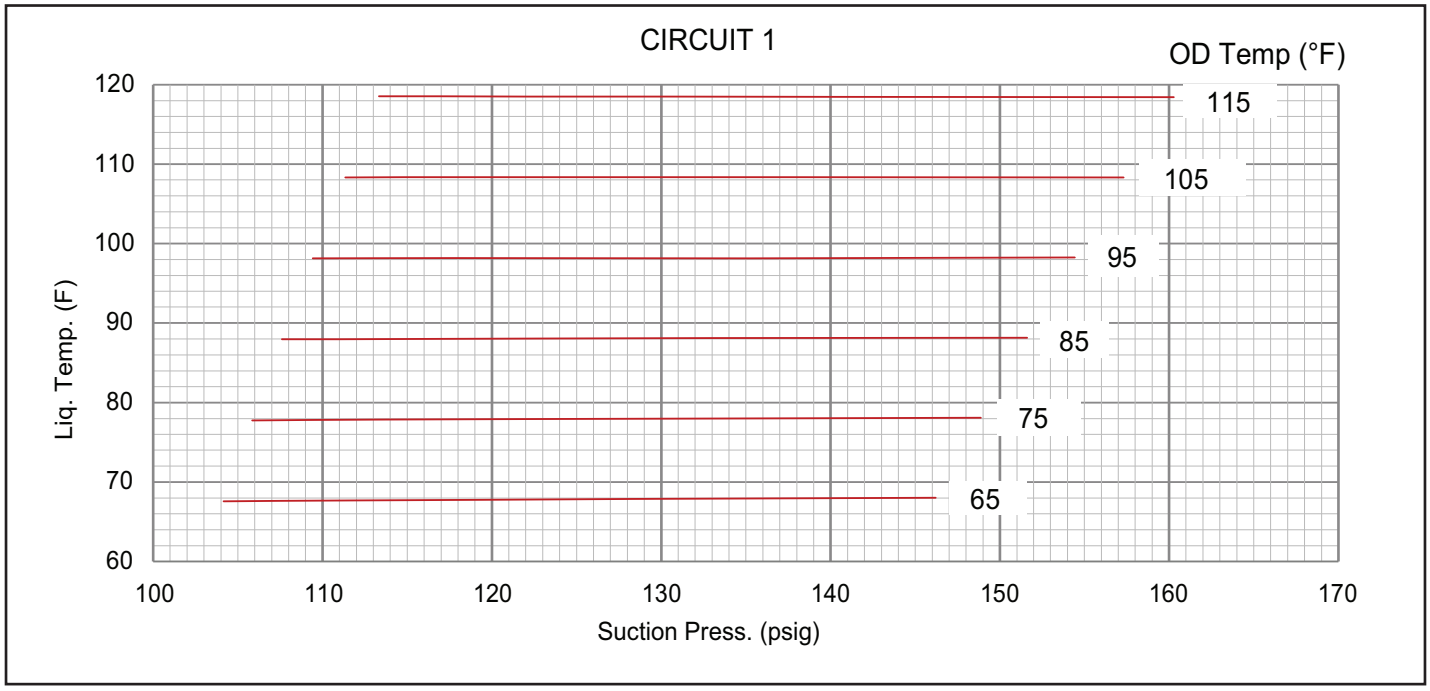


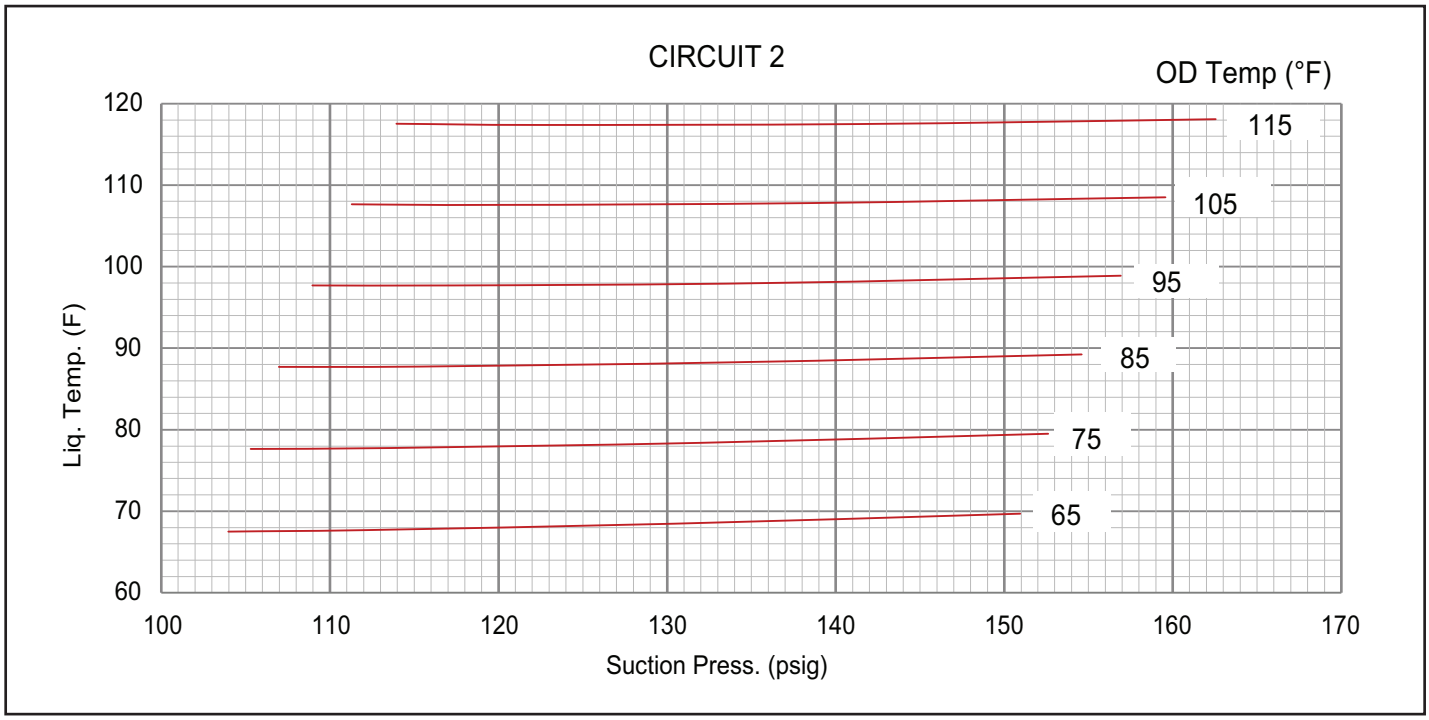
TABLE 20
LGT/LCT 240 REHEAT NORMAL OPERATING PRESSURES - ALL-ALUMINUM OD COIL - 581095-02

	Outdoor Coil Entering Air Temperature											
	65°F		75°F		85°F		95°F		105°F		115°F	
	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)
Circuit 1	104	234	106	268	108	312	109	365	111	428	113	500
	112	241	114	274	116	317	118	370	120	432	122	503
	128	252	131	285	133	326	135	377	138	438	140	508
	146	262	149	293	152	333	154	383	157	442	160	511
Circuit 2	104	242	105	282	107	331	109	388	111	456	114	532
	112	248	114	287	115	335	117	392	120	458	122	534
	130	258	132	295	134	341	136	394	138	462	141	536
	151	264	153	300	155	345	157	399	160	462	163	535
Circuit 3	91	223	93	259	95	300	97	346	99	396	101	450
	98	225	100	261	103	302	105	348	107	398	110	453
	114	229	117	266	120	308	122	354	125	404	128	459
	132	235	135	272	138	314	141	360	144	411	147	466
Circuit 4	93	226	95	264	96	306	98	352	100	403	101	458
	100	229	102	267	104	309	107	355	109	406	111	461
	115	235	118	273	121	315	125	362	127	412	130	468
	132	242	135	280	139	323	143	369	147	420	151	476

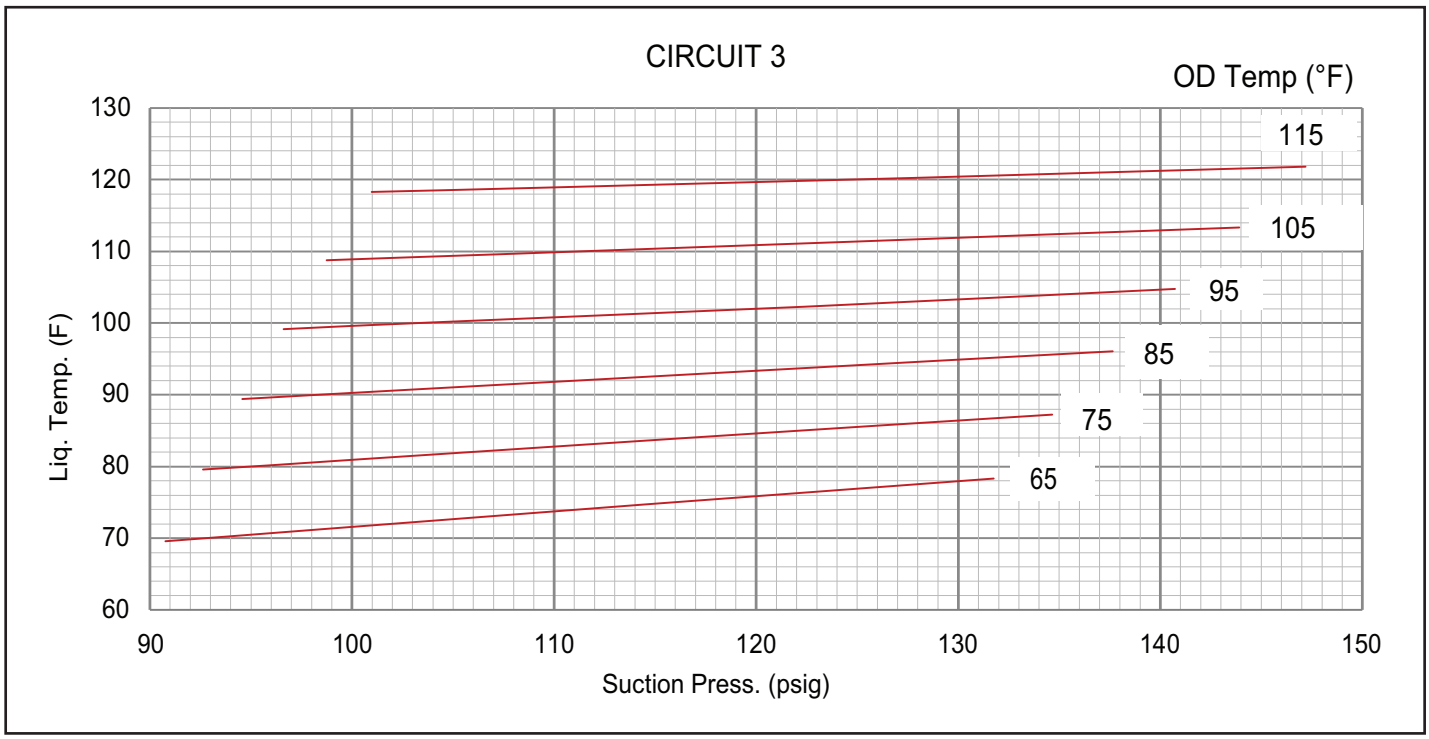
LGT/LCT 240 REHEAT CHARGING CURVE CIRCUIT 1 - ALL-ALUMINUM OD COIL - 581096-02



LGT/LCT 240 REHEAT CHARGING CURVE CIRCUIT 2 - ALL-ALUMINUM OD COIL - 581096-02



LGT/LCT 240 REHEAT CHARGING CURVE CIRCUIT 3 - ALL-ALUMINUM OD COIL - 581096-02



LGT/LCT 240 REHEAT CHARGING CURVE CIRCUIT 4 - ALL-ALUMINUM OD COIL - 581096-02

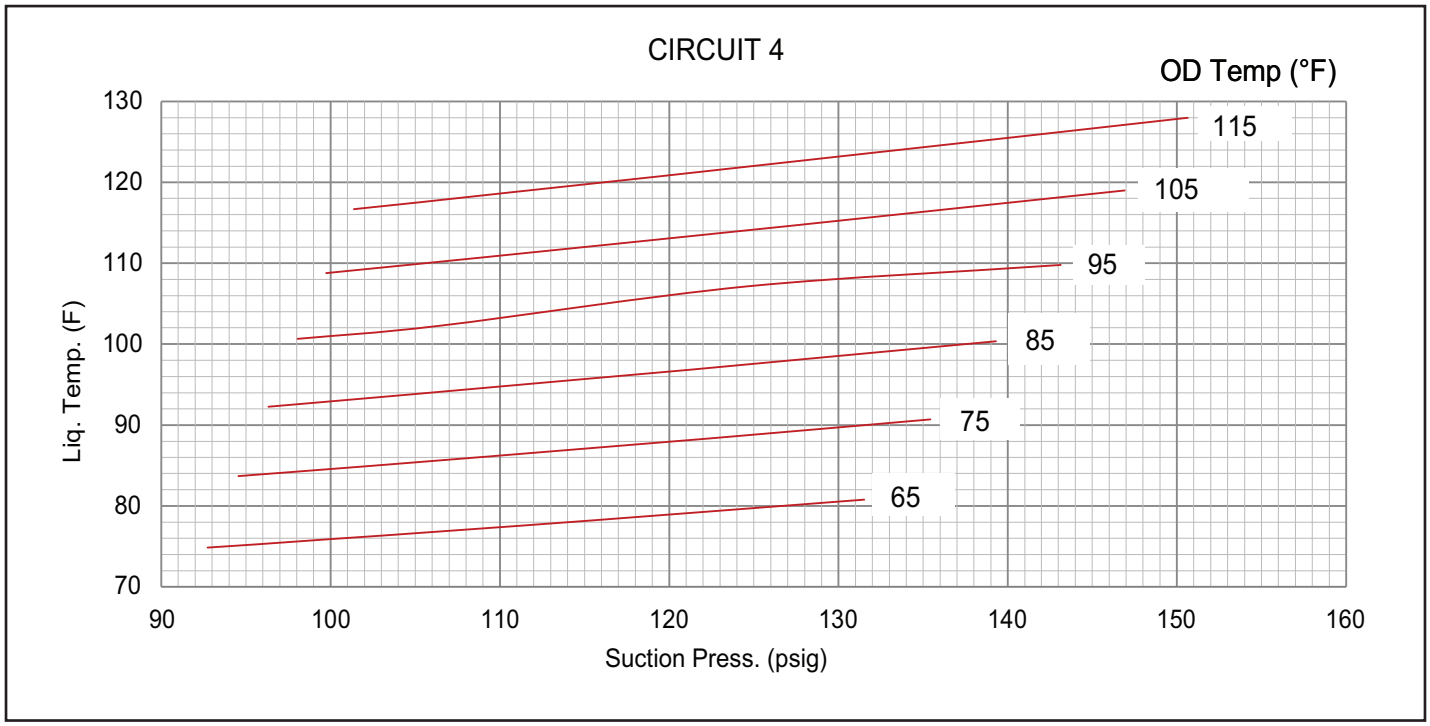
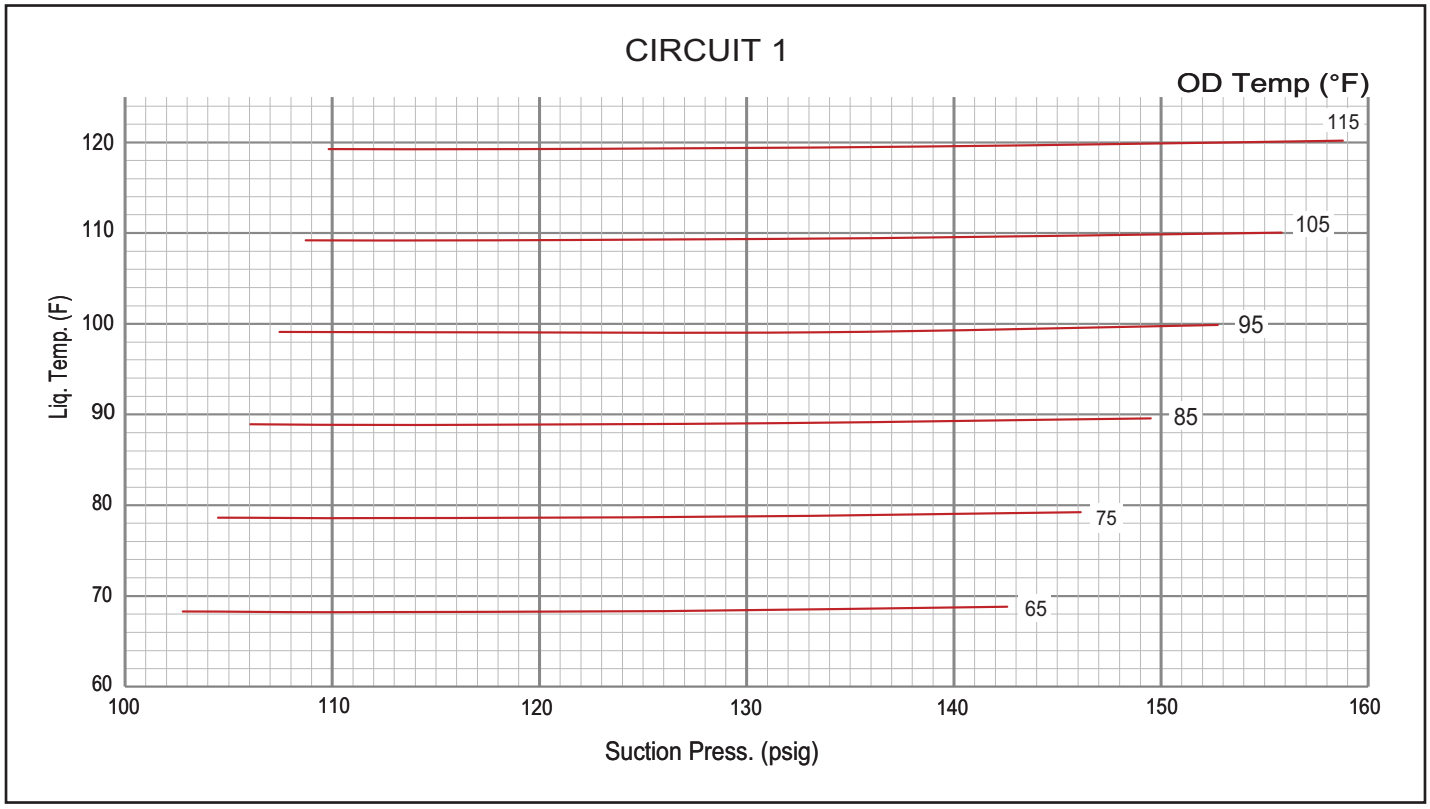


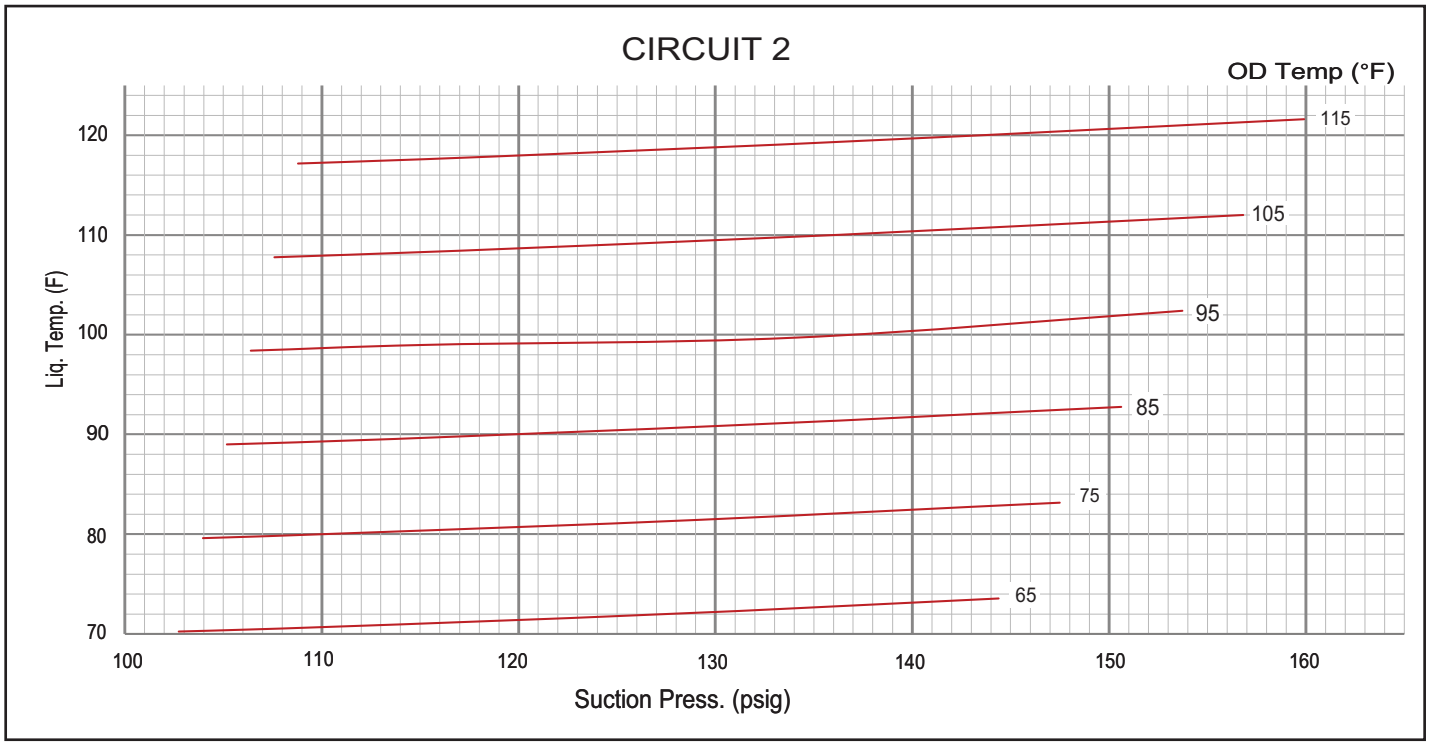
TABLE 21
LGT/LCT 300 REHEAT NORMAL OPERATING PRESSURES - ALL-ALUMINUM OD COIL - 581099-02

	Outdoor Coil Entering Air Temperature											
	65°F		75°F		85°F		95°F		105°F		115°F	
	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)	Suct (psig)	Disc (psig)
Circuit 1	103	244	104	277	106	321	107	373	109	435	110	507
	110	255	112	288	114	331	116	383	118	445	119	516
	126	268	129	301	131	344	133	389	136	457	139	527
	143	270	146	303	150	344	153	396	156	456	159	526
Circuit 2	103	252	104	291	105	333	106	381	108	433	109	489
	111	257	112	295	114	338	115	386	117	438	118	494
	127	267	129	306	132	349	134	394	136	449	139	505
	144	278	148	317	151	361	154	408	157	461	160	517
Circuit 3	87	238	89	278	91	321	92	368	94	418	96	473
	94	240	96	279	98	323	100	370	102	421	104	475
	108	245	111	285	114	328	117	373	120	427	123	483
	123	253	126	293	130	337	134	385	138	437	142	493
Circuit 4	90	245	92	285	94	330	95	377	97	429	98	484
	96	246	99	287	102	332	104	380	105	431	107	486
	110	253	114	294	117	339	120	385	124	440	126	495
	124	263	129	305	134	350	138	399	142	452	146	508

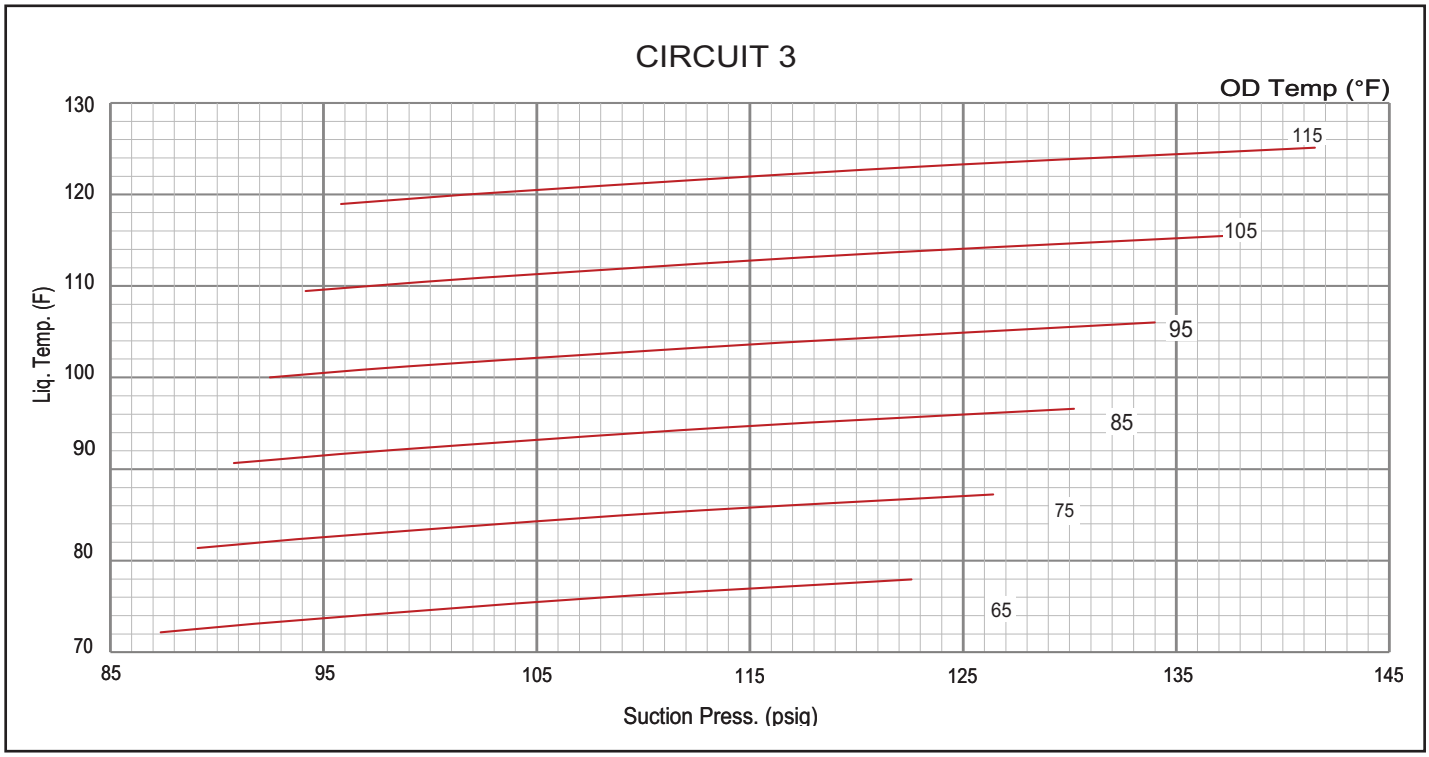
LGT/LCT 300 REHEAT CHARGING CURVE CIRCUIT 1 - ALL-ALUMINUM OD COIL - 581100-02



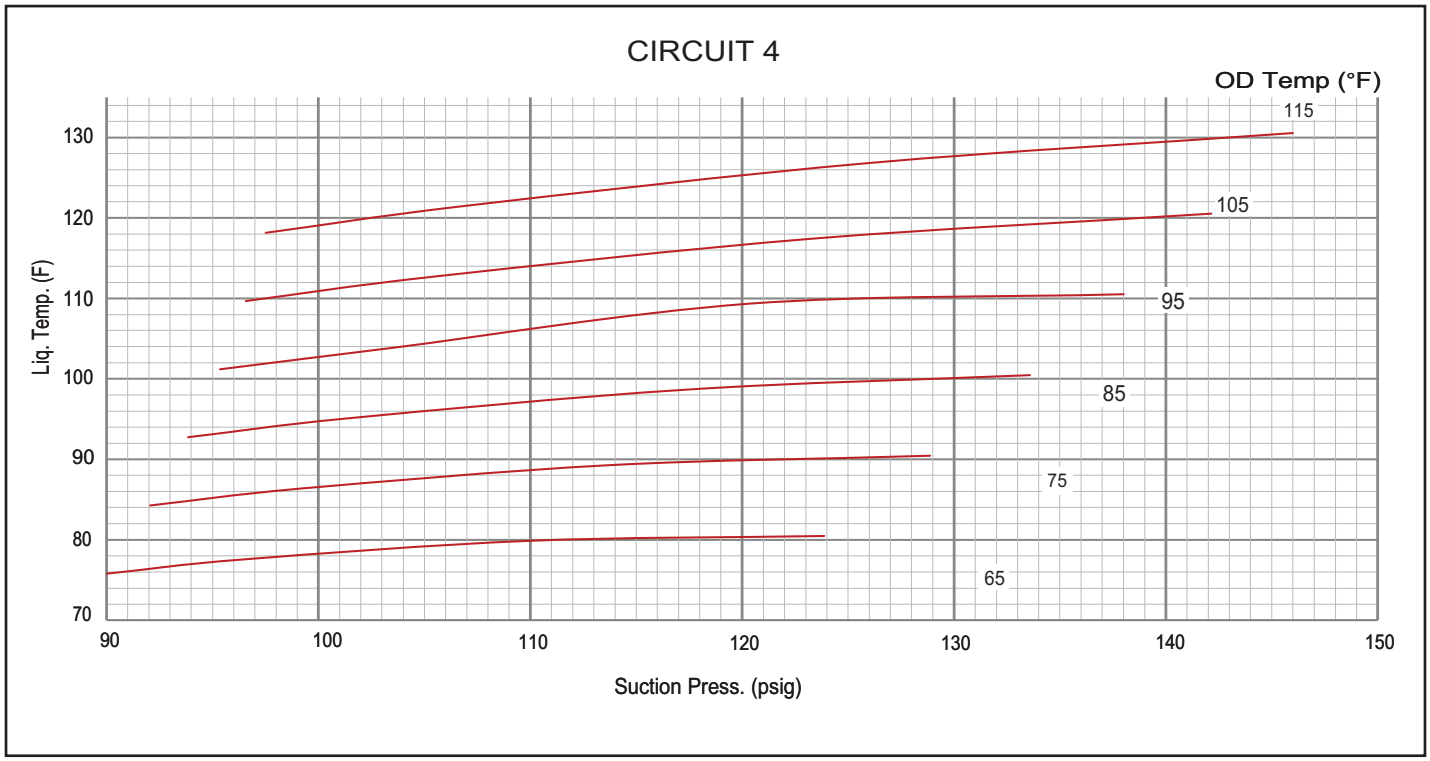
LGT/LCT 300 REHEAT CHARGING CURVE CIRCUIT 2 - ALL-ALUMINUM OD COIL - 581100-02



LGT/LCT 300 REHEAT CHARGING CURVE CIRCUIT 3 - ALL-ALUMINUM OD COIL - 581100-02



LGT/LCT 300 REHEAT CHARGING CURVE CIRCUIT 4 - ALL-ALUMINUM OD COIL - 581100-02



III-STARTUP - OPERATION

Refer to startup directions and to the unit wiring diagram when servicing. See unit nameplate for minimum circuit ampacity and maximum fuse size.

A-Cooling Startup See FIGURE 19, FIGURE 20 and FIGURE 21 for unit refrigerant circuits

NOTE-*Crankcase heaters must be energized 24 hours before attempting to start compressor. Set thermostat so that there is no demand to prevent compressor from cycling. Apply power to unit.*

1 - Initiate first and second stage cooling demands according to instructions provided with thermostat.

2 - First-stage thermostat demand will energize indoor blower in Low Cooling CFM. Second-stage thermostat demand will energize indoor blower in High Cooling CFM. Both demands energize compressor 1. The remaining compressors will be energized as needed to meet cooling demand.

3 - 156 units contain two refrigerant circuits or systems. 180 units contain three refrigerant circuits or systems. 210, 240 and 300 units contain four refrigerant circuits or systems.

4 - Each refrigerant circuit is separately charged with R454B refrigerant. See unit rating plate for correct amount of charge.

5 - Refer to the Refrigerant Check and Charge section to check refrigerant charge.

IV- SYSTEMS SERVICE CHECKS

A-Preliminary and Seasonal Checks

1 - Make sure the unit is installed in accordance with the installation instructions and applicable codes.

2 - Inspect all electrical wiring, both field and factory installed for loose connections. Tighten as required. Refer to unit diagram located on inside of unit control box cover.

3 - Check to ensure that refrigerant lines are in good condition and do not rub against the cabinet or other refrigerant lines.

4 - Check voltage. Voltage must be within the range listed on the nameplate. If not, consult power company and have the voltage corrected before starting the unit.

5 - Recheck voltage and amp draw with unit running. If voltage is not within range listed on unit nameplate, stop unit and consult power company. Refer to unit nameplate for maximum rated load amps.

6 - Inspect and adjust blower belt (see section on Blower Compartment - Blower Belt Adjustment).

B-Cooling System Service Checks

LCT units are factory charged and require no further adjustment; however, charge should be checked periodically using the liquid temperature plots in section II CHARGING.

V-MAINTENANCE

The unit should be inspected once a year by a qualified service technician.

⚠ WARNING

Electric shock hazard. Can cause injury or death. Before attempting to perform any service or maintenance, turn the electrical power to unit OFF at disconnect switch(es). Unit may have multiple power supplies.

⚠ IMPORTANT

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

⚠ WARNING

Any service personnel installing, decommissioning, or performing maintenance on the unit must be properly trained with A2L refrigerants

Prior to beginning work on systems containing refrigerant to ensure the risk of ignition is minimized:

- All 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.
- 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.
- If any hot work is to be conducted on the refrigerating equipment or any associated parts, the appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO2 fire extinguisher adjacent to the charging area.
- 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.

- 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. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

- Where electrical components are being changed, service technicians 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 flameable refrigerants as applicable:

1 - The actual refrigerant charge is in accordance with the room size within which the refrigerant containing parts are installed.

2 - The ventilation machinery and outlets are operating adequately and are not obstructed.

3 - If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant.

4 - Markings on the equipment should be visible and legible. Markings and signs that are illegible shall be corrected.

5 - Refrigerating pipes 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.

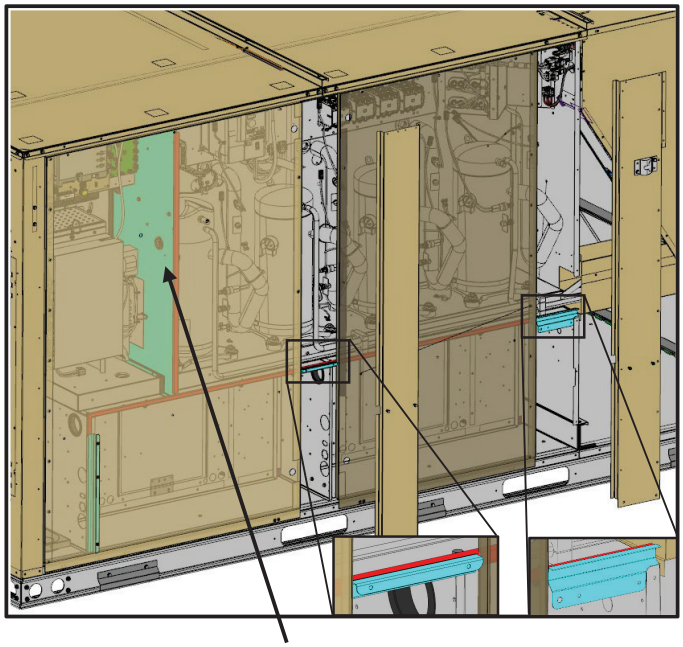
- For systems containing refigerant all repair and maintenance to electrical components shall include initial safety checks and component inspection procedures such as that capacitors are discharged in a safe manner to avoid possibility of sparking, that no live electrical components and wiring are exposed while charging, recovering, or purging the system, and that there is continuity of earth bonding. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used that is reported to the owner of the equipment, so all parties are advised.***NOTE -*** *Sealed electrical components shall be replaced, not repaired.*

  NOTE - *Intrinsically safe components must be replaced, not repaired.*

- 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. 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.
- 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, since flammability is a consideration. The following procedure shall be adhered to:
  a. Safely remove refrigerant following local and national regulations,
  b. Evacuate the circuit,
  c. Purge the circuit with inert gas,
  d. Evacuate,
  e. Purge with inert gas,
  f. Open the circuit.
- 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. Refrigerant 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. This process shall be repeated until no refrigerant is within the system. 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.

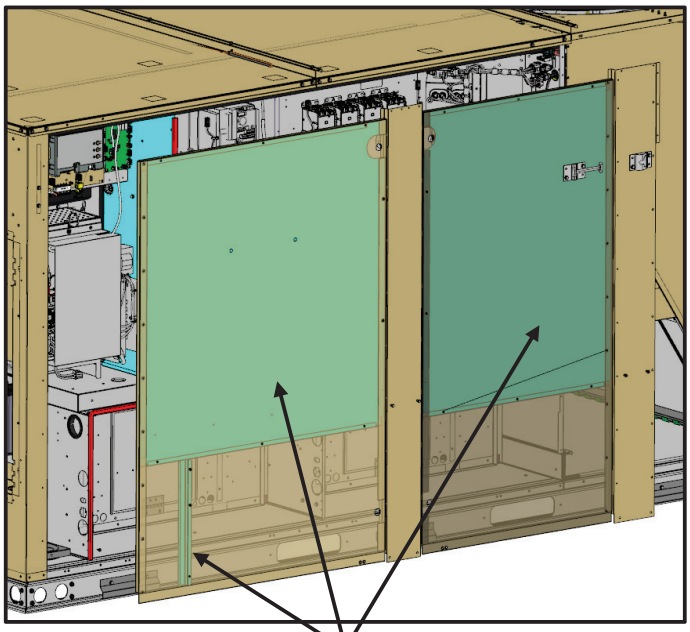
Critical Components for Refrigerant Leak Containment

All Units



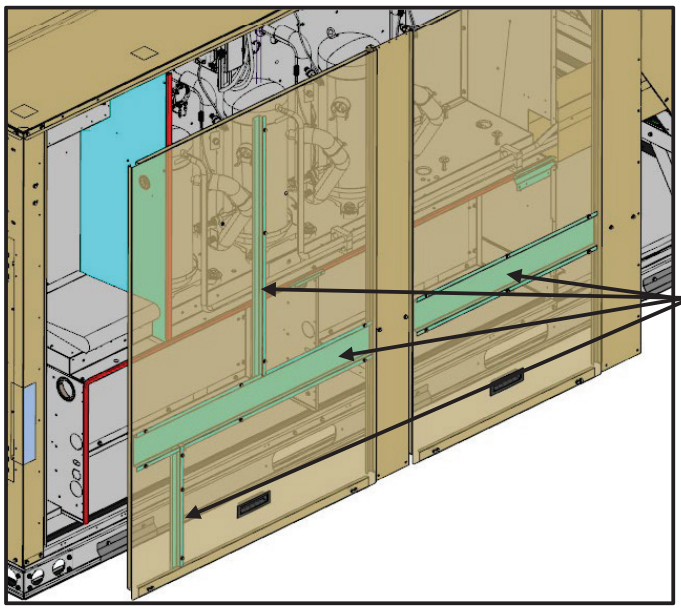
If the door panels, barrier, mullions and rubber seals (highlighted in red) must be removed for service, ensure they are returned to their proper places before starting the unit. Verify that the rubber seals on the barrier and the compressor base panel are properly aligned and tightly secured. Verify that the brackets behind the mullions are secured.

Hinged Door Panels



Verify that the door panel liners and bracket are tightly secured. These steps are critical to containing flammable refrigerant and preventing it from migrating to sources of ignition in the event of a leak.

Non-hinged Door Panels



Verify that the door panel brackets are tightly secured. This is critical to containing flammable refrigerant and preventing it from migrating to sources of ignition in the event of a leak.

A-Filters

LCT units use six 24 X 24 X 2" fiberglass throw-away type filters. Filters may be accessed through the economizer / filter access door. Filters should be checked monthly (or more frequently in severe use) and cleaned or replaced regularly. Take note of the "AIR FLOW DIRECTION" marking on the filter frame when re-installing.

B-Lubrication

All motors and blower wheels used in LCT units are lubricated; no further lubrication is required.

C-Supply Air Blower Wheel

Annually inspect supply air blower wheel for accumulated dirt or dust. Turn off power before attempting to remove access panel or to clean blower wheel.

D-Evaporator Coil

Inspect and clean coil at beginning of each season. Clean using mild detergent or commercial coil cleanser. Check condensate drain pan and line, if necessary. Flush coil and condensate drain with water taking care not to get insulation, filters and return air ducts wet. Check connecting lines and coil for evidence of oil and refrigerant leaks.

E-Condenser Coil

Clean condenser coil annually with detergent or commercial coil cleaner and inspect monthly during the cooling season. Check connecting lines and coil for evidence of oil and refrigerant leaks.

F-Electrical

1 - Check all wiring for loose connections.

2 - Check for correct voltage at unit (unit operating).

3 - Check amp-draw on both condenser fan motor and blower motor.

Fan Motor Rating Plate ____ Actual _____

Indoor Blower Motor Rating Plate____ Actual___

VII-ACCESSORIES

The accessories section describes the application of most of the optional accessories which can be factory or field installed to the LCT units.

A-Roof Curbs

When installing the LCT units on a combustible surface for downflow discharge applications, the hybrid C1CURB70C-1 8-in height, C1CURB71C-1 14-in height, C1CURB72C-01 18-in height and C1CURB73C-1 24-in roof mounting frame is used. The assembled hybribd mounting frame is shown in FIGURE 30. Refer to the roof mounting frame installation instructions for details of proper assembly and mounting. The roof mounting frame MUST be squared to the roof and level before mounting. Plenum system MUST be installed before the unit is set on the mounting frame. Typical roof curbing and flashing is shown in FIGURE 31. Refer to the roof mounting frame installation instructions for proper plenum construction and attachment.

For horizontal discharge applications, use the standard C1URB14C-1 26-in or C1CURB16C-1 37-in height roof mounting frame. This frame converts unit from down-flow to horizontal air flow. The 37 inch horizontal frame meets National Roofing Code requirements. The roof mounting frames are recommended in all other applications but not required. If the LCT units are not mounted on a flat (roof) surface, they MUST be supported under all edges and under the middle of the unit to prevent sagging. The units MUST be mounted level within 1/16" per linear foot or 5mm per meter in any direction.

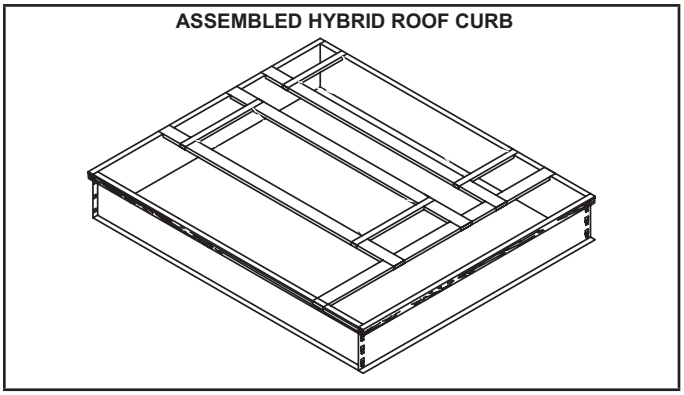


FIGURE 30

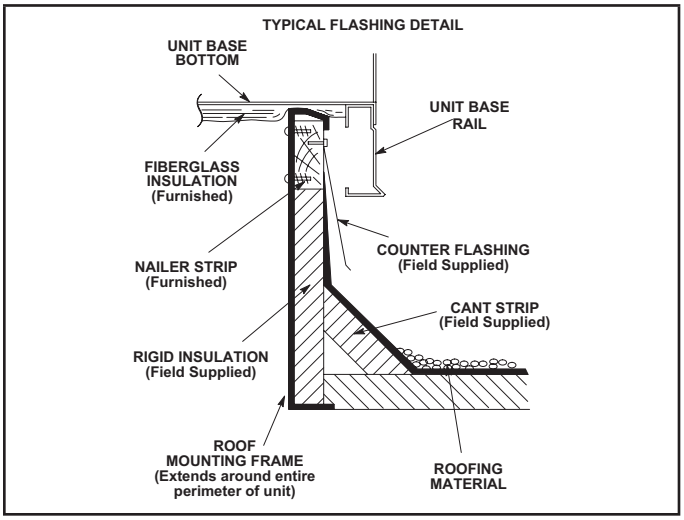


FIGURE 31

B-Transitions

Optional supply/return transitions C1DIFF33C-1 and C1DIFF34C-1 are available for use with LCT series units utilizing optional C1CURB roof curbs. Transition must be installed in the roof curb before mounting the unit to the frame. Refer to the manufacturer's instructions included with the transition for detailed installation procedures.

C-C1DAMP10 & E1DAMP20 Outdoor Air Dampers

C1DAMP10C and E1DAMP20C (FIGURE 32) consist of a set of dampers which may be manually or motor operated to allow up to 25 percent outside air into the system at all times. Either air damper can be installed in LCT units. Washable filter supplied with the outdoor air dampers can be cleaned with water and a mild detergent. It should be sprayed with Filter Handicoater when dry prior to reinstallation. Filter Handicoater is R.P. Products coating no. 418 and is available as Part No. P-8-5069.

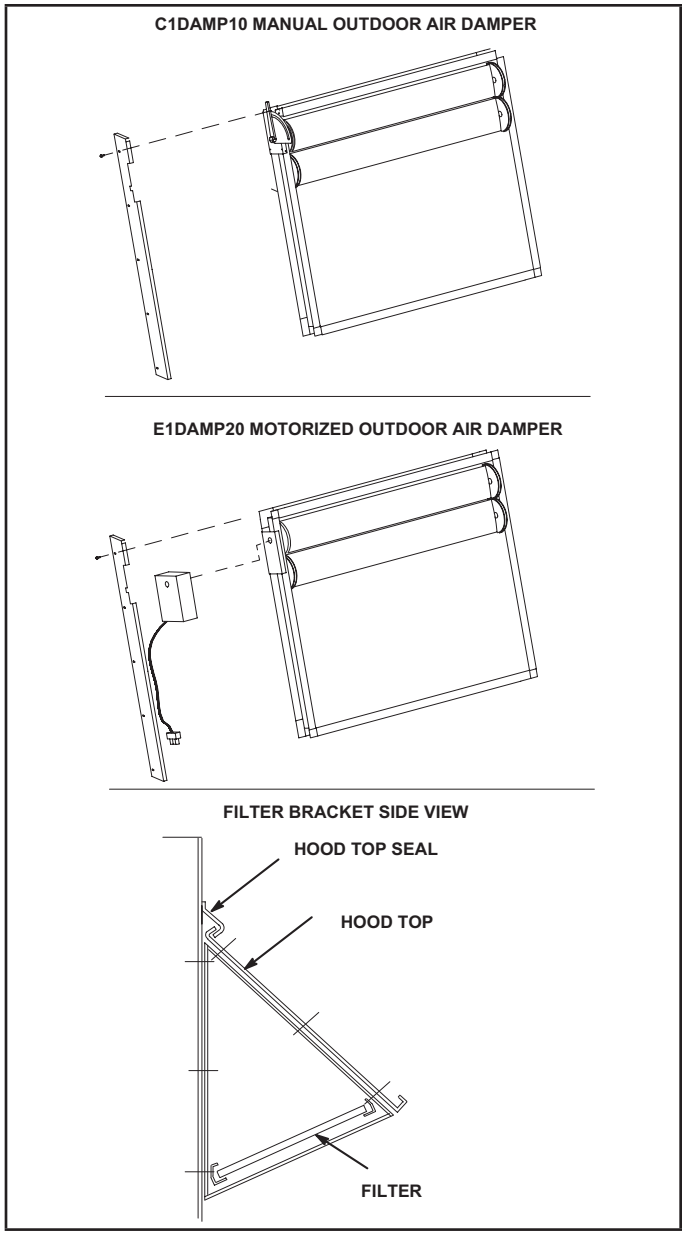


FIGURE 32

D-Supply and Return Diffusers

Optional flush mount diffuser/return FD11 and extended mount diffuser/return RTD11 are available for use with all LCT units. Refer to manufacturer's instructions included with transition for detailed installation procedures.

E-E1ECON15C-2 Standard and E1ECON17C-1 High Performance Economizer (Field or Factory Installed)

The optional economizer can be used with downflow and horizontal air discharge applications. The economizer uses outdoor air for free cooling when temperature and/or humidity is suitable. An economizer hood is furnished with the economizer.

NOTE - *Gravity exhaust dampers are required with power exhaust.*

The economizer is controlled by the A55 Unit Controller. The economizer will operate in one of four modes. Each mode requires a different A55 Unit Controller DIP switch setting. Each mode also requires different sensors. The following is a brief description. See economizer installation instruction for more detail.

1-"TMP" MODE (SENSIBLE TEMPERATURE)

In the "TMP" mode, the IMC uses input from the factory installed RT6 Supply Air Sensor, RT16 Return Air Sensor and RT17 Outdoor Air Sensor to determine suitability of outside air and economizer damper operation. When outdoor sensible temperature is less than return air sensible temperature, outdoor air is used for cooling. This may be supplemented by mechanical cooling to meet comfort demands. This application does not require additional optional sensors.

2-"ODE" MODE (OUTDOOR ENTHALPY)

The "ODE" or outdoor enthalpy mode requires a field-provided and -installed Honeywell C7400 enthalpy sensor (16K96). The sensor monitors outdoor air temperature and humidity (enthalpy). When outdoor air enthalpy is below the enthalpy control setpoint, the economizer modulates to allow outdoor air for free cooling.

3-"DIF" MODE (DIFFERENTIAL ENTHALPY)

The "DIF" or differential enthalpy mode requires two field-provided and -installed Honeywell C7400 enthalpy sensors (16K97). One sensor is installed in the outside air opening and the other sensor is installed in the return air opening. When the outdoor air enthalpy is below the return air enthalpy, the economizer opens to bring in ou door air for free cooling.

4-"GLO" MODE (GLOBAL)

Global Mode - The "GLO" or global mode is used with an energy management system which includes a global control feature. Global control is used when multiple units (in one location) respond to a single outdoor air sensor. Each energy management system uses a specific type of outdoor sensor which is installed and wired by the controls contractor.

Motorized Outdoor Air Damper - The "GLO" mode is also used when a motorized outdoor air damper is installed in the system.

NOTE - *All economizer modes of operation will modulate dampers to 55F supply air.*

F-Gravity Exhaust Dampers

C1DAMP50C dampers (FIGURE 33) are used in downflow and LAGEDH are used in horizontal air discharge applications. LAGEDH gravity exhaust dampers are installed in the return air plenum . The dampers must be used any time an economizer or power exhaust fans are applied to LCT series units. An exhaust hood is furnished with the gravity exhaust damper.

Gravity exhaust dampers allow exhaust air to be discharged from the system when an economizer and/or power exhaust is operating. Gravity exhaust dampers also prevent outdoor air infiltration during unit off cycle. See installation instructions for more detail.

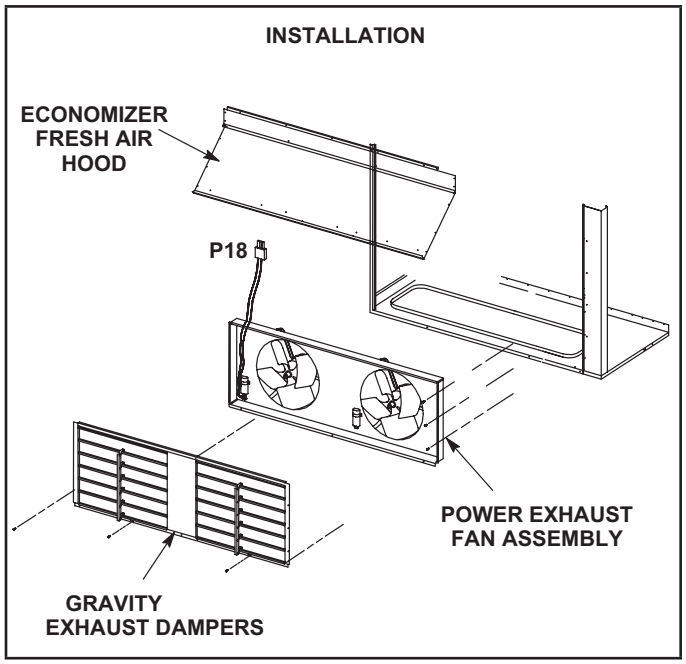


FIGURE 33

G-C1PWRE10 Power Exhaust Fans

C1PWRE10 power exhaust fans are used in downflow applications only. C1PWRE10 fans require optional downflow gravity exhaust dampers and E1ECON15 economizers. Power exhaust fans provide exhaust air pressure relief and also run when return air dampers are closed and supply air blowers are operating. FIGURE 33 shows the location of the power exhaust fans. See installation instructions for more detail.

H-Optional Cold Weather Kit (Canada only)

Electric heater is available to automatically control the minimum temperature in the gas burner compartment. Heater is C.G.A. certified to allow cold weather operation of unit down to -60° F.

The kit includes the following parts:

1 - The strip heater (HR6) is located as close as possible to the gas valve. The strip heater is rated at 500 Watts (line voltage).

2 - A thermostat mounting box is installed on the vestibule of the heating compartment. Included in the box are the following thermostat switches:

a. Thermostat switch (S59) is an auto-reset SPST N.C. switch which opens on a temperature drop. The switch is wired in series with 24v power and the combustion air blower switch. When the temperature drops below -30° F the switch opens and the gas heat section is de-energized. The switch automatically resets when the heating compartment temperature reaches -10° F.

b. Thermostat switch (S60) is an auto-reset SPST N.C. switch which opens on a temperature rise. The switch is wired in series with K125 coil. When the temperature rises above 20° F the switch opens and the electric heater is de-energized through K125. The switch automatically resets when the heating compartment temperature reaches -10° F.

c. Thermostat switch (S61) is an auto-reset SPST N.O. switch which closes on a temperature drop. The switch is wired in series with K125 coil. When temperature drops below 20° F the switch closes and electric heater is energized through K125. The switch automatically opens when heating compartment temperature reaches 76° F.

I-Control Systems

The A55 Unit Controller provides all control function for the rooftop unit. Default operation requires a standard room thermostat or direct digital controller (DDC). The A55 can also control the unit from a zone temperature sensor. The A55 Unit Controller is a network controller when daisy-chained to the L Connection® Network Control System. For ease of configuration, the A55 can be connected to a PC with Unit Controller PC software installed.

J-Smoke Detectors A171, A172, A173

Photoelectric smoke detectors are a factory- and field-installed option. The smoke detectors can be installed in the supply air section (A172), return air section (A171), or in both the supply and return air section. Smoke detection control module (A173) is located below the control panel. Wiring for the smoke detectors are shown on the temperature control section (C) wiring diagram in back of this manual.

K-Blower Proving Switch S52

The blower proving switch monitors blower operation and locks out the unit in case of blower failure. The switch is N.O. and closes at .15" W.C. The switch is mounted on the middle left corner of the blower support panel. Wiring for the blower proving switch is shown on the temperature control section (C) wiring diagram in back of this manual.

L-Dirty Filter Switch S27

The dirty filter switch senses static pressure increase indicating a dirty filter condition. The switch is N.O. and closes at 1" W.C. The switch is mounted on the top corner of the economizer. Wiring for the dirty filter switch is shown on the temperature control section (C) wiring diagram in back of this manual.

M-Optional UVC Lights

The Healthy Climate- germicidal light emits ultraviolet (UVC) energy that has been proven effective in reducing microbial life forms (viruses, bacteria, yeasts and molds) in the air.

UVC germicidal lamps greatly reduce the growth and proliferation of mold and other bio-aerosols (bacteria and viruses) on illuminated surfaces.O-Optional UVC Lights The Healthy Climate germicidal light emits ultraviolet (UVC) energy that has been proven effective in reducing microbial life forms (viruses, bacteria, yeasts and molds) in the air.

UVC germicidal lamps greatly reduce the growth and proliferation of mold and other bio-aerosols (bacteria and viruses) on illuminated surfaces.

Germicidal lamps are NOT intended to be used for removal of active mold growth. Existing mold growth must be appropriately removed PRIOR to installation of the germicidal lamp.

Refer closely to UVC light installation instruction warnings when servicing units.

N-Drain Pan Overflow Switch S149 (optional)

The overflow switch is used to interrupt cooling operation when excessive condensate collects in the drain pan. The N.C. overflow switch is connected to the M2 Unit Controller (A55) through DI-3. When the switch opens, the Unit Controller will shut off the unit. After a five-minute time out, the Unit Controller will verify the overflow switch position and restart the unit (if the switch has closed). The Unit Controller has a three-strike counter before the unit locks out. This means the Unit Controller will allow the overflow switch to open three times per thermostat demand. If the unit locks out, a reset of the Unit Controller is required after the switch has closed to restore unit operation.

O-Indoor Air Quality Sensor

If a sensor fails, use the following procedures to physically remove the failed sensor from the unit. All units will have two IAQ sensors installed, one in the return air and the second one in the supply side. See FIGURE 34. The sensors are secured to the tray by two screws. The power cable assembly will need to be detached from the connector located on the bottom of the sensor as well.

Removing the Sensor

1 - Go to Menu > Network Integrations > Wireless Sensor Network Setup > Wireless Sensor Network.

2 - From the Network Nodes list, select the IAQ sensor that is being replaced.

3 - On the Sensor Information Screen, select the Remove Sensor option at the bottom of the screen.

4 - Type in the sensor name that is to be removed and select Proceed.

Replacing the Sensor

1 - Open the CORE Service App and navigate to Menu > (Setup) Network Integration > Wireless Sensor Network Setup > Wireless Sensor Network.

2 - Click Add node on the Network Nodes screen. This triggers the CORE Service App to scan for both the WIAQ Return Sensor and WIAQ Discharge Sensor.

3 - Follow the prompts on the screen to finish the adding process.

4 - Verify that the CORE Service App displays the “Node Provisioned” on the Provision Sensor Network.

5 - Verify if CORE Service app is showing PM2.5 counts for both return and supply mounted sensors and TVOC counts from return mounted sensor.

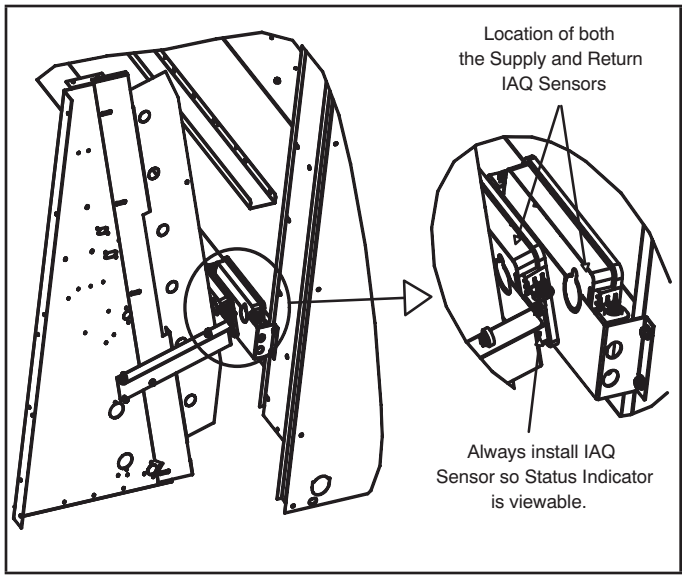


FIGURE 34

P-Bipolar Ionizer

The Needlepoint Bipolar Ionizer (NBPI) kit is specifically designed for LG/LC/LH/LD/KG/KC/KH 024-300 units. The ionizer is equipped with dry contacts which allow a Building Automation System (BAS) to interface and indicate ionizer functionality.

Note - The BAS will be able to monitor units equipped with M4 Unit Controllers only. Units with an M3 Unit Controller or no controller need to be connected to a separate monitoring system.

The Ionizers are also equipped with a green LED which indicates power is on. When the blower is in operation, power is delivered to the Ionizers and ions are generated. See TABLE 22 for unit application.

TABLE 22

LCT Unit	Part No.	
156	21U37	622688-03
240	21U38	622688-04
300	21U39	622688-05

VII-Factory-Installed Hot Gas Re-Heat

General

Hot gas reheat units provide a dehumidifying mode of operation. These units contain a reheat coil adjacent to and downstream of the evaporator coil. Reheat coil solenoid valves, L14 and L30, route hot discharge gas from the compressor to the reheat coil. Return air pulled across the evaporator coil is cooled and dehumidified; the reheat coil adds heat to supply air. FIGURE 35 through FIGURE 37 show reheat refrigerant routing and cooling mode refrigerant routing.

L14 and L30 Reheat Coil Solenoid Valves

When Unit Controller (P298-5 or J299-8) indicates room conditions require dehumidification, reheat valves L14 and L30 are energized (Unit Controller J394-1 or J394-3) and refrigerant is routed to the reheat coil.

Reheat Setpoint

Reheat is factory-set to energize when indoor relative humidity rises above 60% (default). The reheat setpoint can be adjusted by changing mobile service app *Settings - Control* menu. A setting of 100% will operate reheat from an energy management system digital output. The reheat setpoint can also be adjusted using an optional Network Control Panel (NCP).

Reheat will terminate when the indoor relative humidity falls 3% (57% default) or the digital output de-energizes. The reheat deadband can be adjusted at Settings - Control menu.

A91 Humidity Sensor

Relative humidity should correspond to the sensor (A91) output voltage listed in TABLE 23. For example: if indoor air relative humidity is 80% + 3%, the humidity sensor output should read 8.00VDC.

Check the sensor output annually for accuracy. Keep the air intake openings on the sensor clean and free of obstructions and debris.

TABLE 23

Relative Humidity (%RH ± 3%)	Sensor Output (VDC)
20	2.00
30	3.00
40	4.00
50	5.00
60	6.00
70	7.00
80	8.00
90	9.00

Check-Out

Test hot gas reheat operation using the following procedure.

1 - Make sure reheat is wired as shown in wiring section.

2 - Make sure unit is in local thermostat mode.

3 - Use mobile service app (the QR is located in the control area) menu path to select:

SERVICE > TEST > DEHUMIDIFIER

The blower, compressor 1 and compressor 2 (reheat) should be operating. Reheat mode will appear on the mobile service app display.

4 - Deselect:

SERVICE > TEST > DEHUMIDIFIER

Compressor 1 and 2 (reheat) should de-energize, blower should still be energized.

Default Reheat Operation

Reheat will operate as shown in TABLE 24 once this condition is met:

1 - System must NOT be operating in heating mode.

IMPORTANT - Free cooling does not operate during reheat.

For other reheat control options, refer to the Unit Controller manual.

Additional Cooling Stages

Units are shipped from the factory to provide two stages of cooling.

Compressors are not de-energized when unit operation changes from cooling to reheat or from reheat to cooling. Instead, L14 and L30 reheat valves are energized (reheat) or de-energized (cooling).

NOTE - *Another thermostat staging option is available which allows both compressors to be energized during free cooling. See Unit Controller manual for details.*

REFRIGERANT SCHEMATIC (156 MODEL ONLY)

NOTE - Two refrigerant circuits operate during reheat.

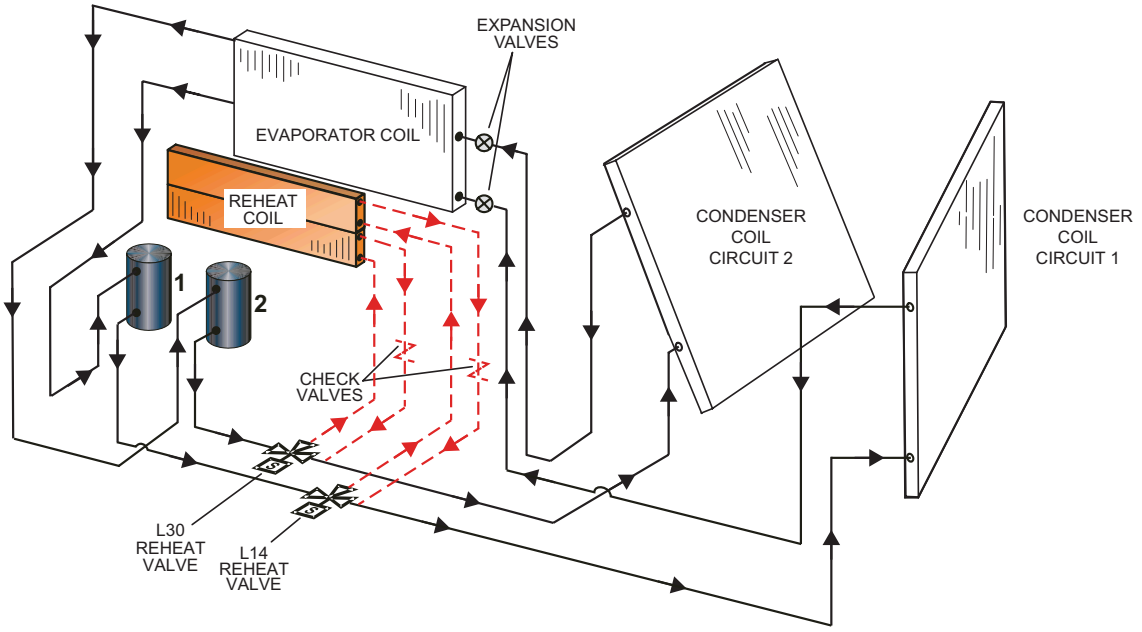


FIGURE 35

REFRIGERANT SCHEMATIC (180 MODEL ONLY)

NOTE - Two refrigerant circuits operate during reheat.

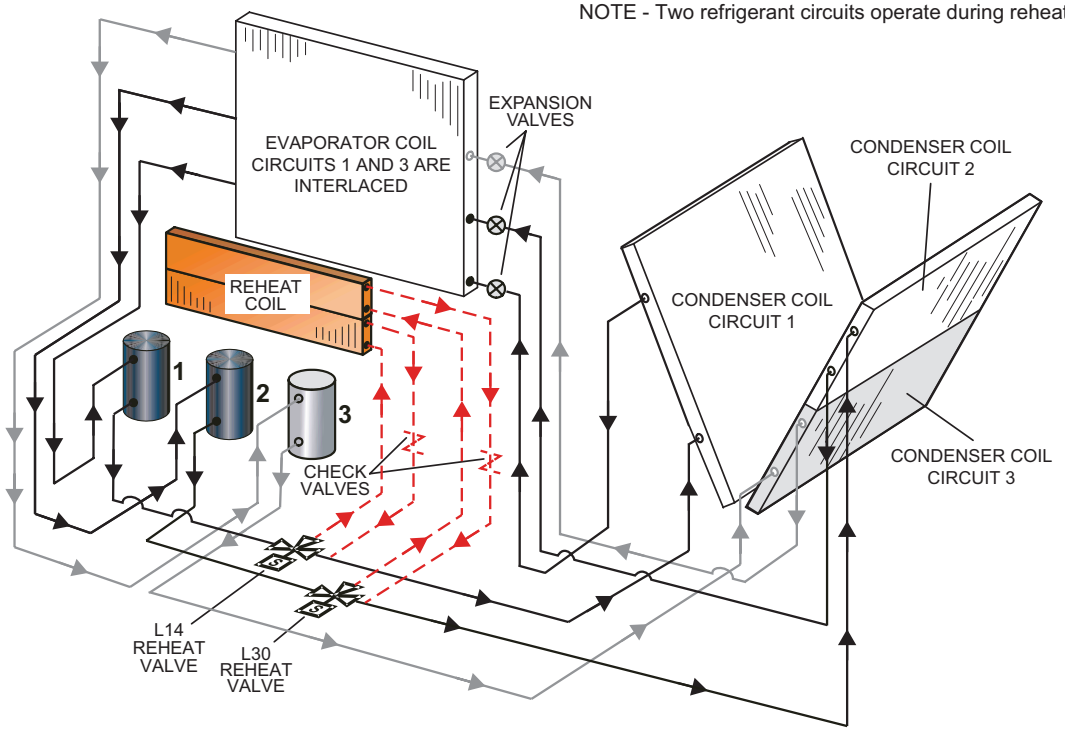


FIGURE 36

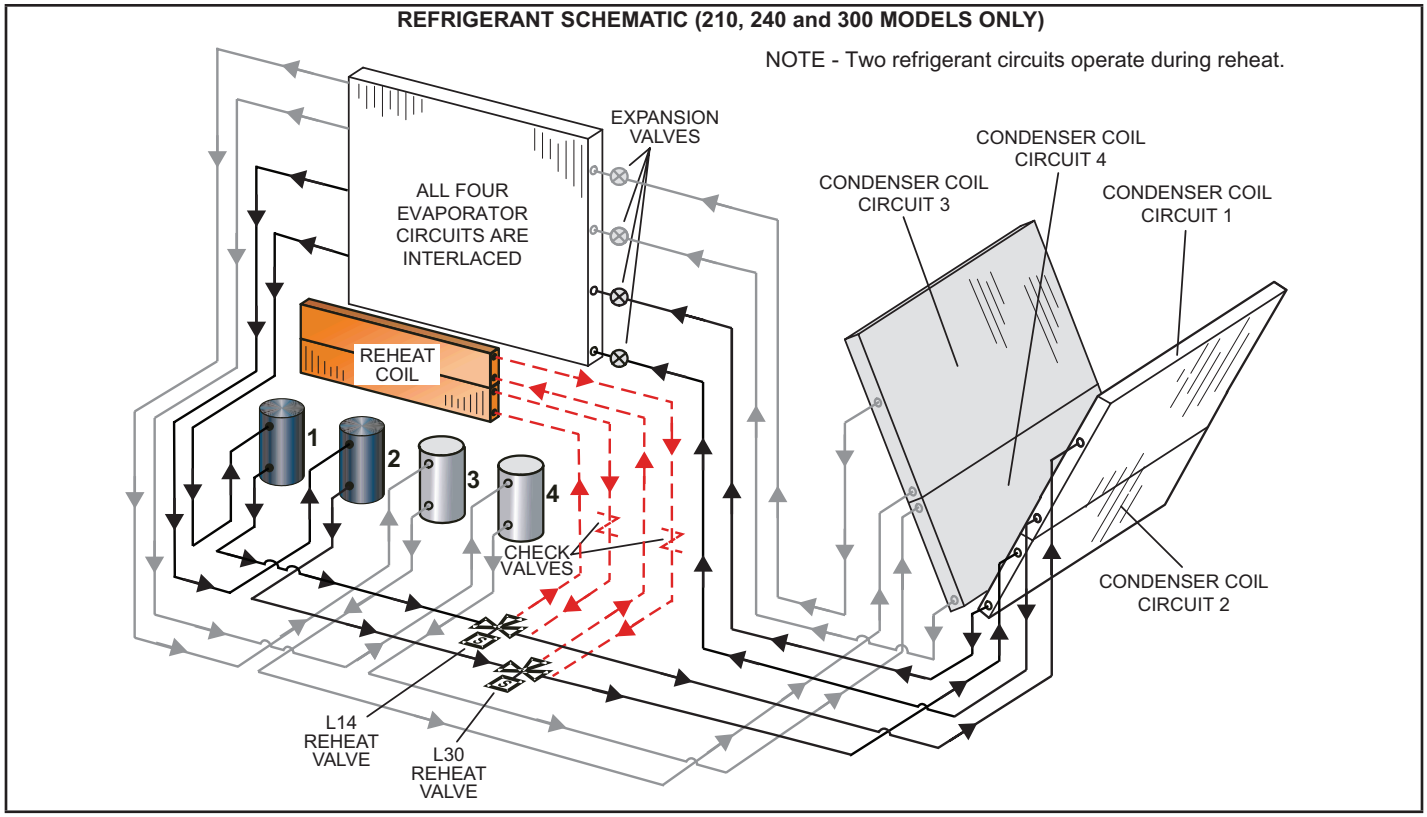

REFRIGERANT SCHEMATIC (210, 240 and 300 MODELS ONLY)
NOTE - Two refrigerant circuits operate during reheat.
EXPANSION VALVES
ALL FOUR EVAPORATOR CIRCUITS ARE INTERLACED
REHEAT COIL
1
2
3
4
CHECK VALVES
L14 REHEAT VALVE
L30 REHEAT VALVE
CONDENSER COIL CIRCUIT 4
CONDENSER COIL CIRCUIT 3
CONDENSER COIL CIRCUIT 1
CONDENSER COIL CIRCUIT 2

FIGURE 37

TABLE 24

REHEAT OPERATION

Thermostat Mode With 24V Humidistat	
Humidity Demands	Operation
24V Demand for Dehumidification only	• Compressor 1 and 2 reheat on • Reheat valves are energized • Remaining compressors are off
24V Demand for Dehumidification only is still present after Five Minutes	• Compressor 1 & 2 reheat on • Reheat valves are energized • Remaining compressors are energized as needed to meet cooling
Thermostat Mode with Zone Relative Humidity (RH) Sensor	
Zone humidity is greater than Setpoint +2%	• Compressor 1 and 2 reheat on • Reheat valves are energized • Remaining compressors are off
Zone humidity is greater than Setpoint +2% OR Zone humidity is greater than Setpoint for 5 minutes	• Compressor 1 & 2 reheat on • Reheat valves are energized • Remaining compressors are energized as needed to meet cooling

VIII--Multi-Staged Blower

A-Design Specifications

Use the “Blower CFM Design Specifications” table attached to the unit (table 18 in the installation instructions) to fill in test and balance values when setting up the unit. If only high and low cooling design specifications are provided, set the medium cooling CFM at the high or low cooling design spec or any CFM between.

B-Set Maximum CFM

Use attached table to determine highest blower CFM for appropriate unit. Adjust the blower pulley to deliver that amount of CFM with only the blower operating. See Determining Unit CFM in the Blower Operation and Adjustment section.

C-Set Blower Speeds

1 - Use the following mobile service app menu to enter the blower design specified CFM into the Unit Controller. Make sure blower CFM is within limitations shown in TABLE 25 or TABLE 26. Refer to the Unit Controller manual provided with unit.

RTU MENU > RTU OPTIONS > BLOWER > SPEED

2 - Enter the following design specifications as shown in TABLE 25.

Blower /

Heat CFM

Cooling High CFM

Cooling Low CFM

Vent CFM

3 - Adjust the blower RPM to deliver the target CFM based on the measured static pressure using the blower table.

4 - Measure the static pressure again and apply the static pressure and RPM to the blower tables to determine adjusted CFM.

5 - Repeat adjustments until design CFM is reached.

D-Set Damper Minimum Position

To maintain required minimum ventilation air volumes when the unit is in the occupied mode, two minimum damper positions must be set.

The Unit Controller will open the damper to “Min OCP Blwr High” when blower CFM is at or ABOVE the “midpoint” CFM.

The Unit Controller will open the dampers to “Min OCP Blwr Low” when blower CFM is BELOW a “midpoint” CFM.

The Unit Controller will calculate the “midpoint” CFM.

*Available blower speeds vary by unit and thermostat stages.

Set Minimum Position 1

Use the following mobile service app menu to set “Min OCP Blwr High” for the blower CFM above the “midpoint” CFM. When navigating into this menu, the Unit Controller will run damper calibration and allow damper position adjustment.

RTU MENU > SETTINGS > RTU OPTIONS > DAMPER

Tap “Next” to skip tabs and complete damper position calibration until “Damper Calibration Blower Speed High” tab appears.

Measure the intake air CFM. If the CFM is lower than the design specified CFM for ventilation air, use the Unit Controller 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 Minimum Position 2

Use the following mobile service app menu in the Unit Controller to set “Min OCP Blwr Low” for the blower CFM below the “midpoint” CFM. When navigating into this menu, the Unit Controller will run damper calibration and allow damper position adjustment.

RTU MENU > SETTINGS > RTU OPTIONS > DAMPER

Tap “Next” to skip tabs and complete damper position calibration until “Damper Calibration Blower Speed High” tab appears.

Measure the intake air CFM. If the CFM is lower than the design specified CFM for ventilation air, use the Unit Controller 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.*

E-Inverter Bypass Option

The supply air inverter is factory-set to by-pass the inverter manually. To by-pass the inverter and operate the blower in the constant air volume mode, use the following Unit Controller menu and set to “engaged”:

SETTINGS > RTU OPTIONS > BLOWER > VFD BYPASS

To configure the unit to by-pass the inverter automatically, use the following Unit Controller menu.

SETUP > INSTALL

Press SAVE until the menu reads:

CONFIGURATION ID 1

Change the 6th character position to “A” for automatic by-pass option.

Press SAVE

Caution - *Units not equipped with an inverter will have the 6th character set to “N”, indicating the inverter is not by-passed. The blower motor could be damaged and/or result in product or property damage if the setting is changed to automatic or manual.*

TABLE 25

HEATING, VENTILATION & SMOKE MINIMUM AND MAXIMUM CFM

Unit				Heating CFM			Vent CFM			Smoke CFM		
Tons	Model	Speed	Heat Code	Default	Min	Max	Default	Min	Max	Default	Min	Max
13	LCT156H	Low	L	5200	2725	6250	5200	1950		5200	1950	6250
		Std	S		4325							
		Med	M		4500							
	LCT156H	All	N, E, J. K, L		5200							
15	LCT180H	Low	L	6000	2725	7200	6000	2250		6000	2250	7200
		Std	S		4325							
		Med	M		4500							
		High	H		5125							
	LCT180H	15, 30, 45, 60kW	N, E, J. K, L		5200							
17.5	LCT210H	Low, Std, Med	L, S, M	7000	4500	8400	7000	2625		7000	2625	8400
		High	H		5125							
	LCT210H	15, 30,45, 60kW	N, E, J, K, L		5200							
		90kW	P		6000							
20	LCT240H	Low, Std, Med	L, S, M	8000	4500	9600	8000	3000		8000	3000	9600
		High	H		5125							
	LCT240H	15, 30,45, 60kW	N, E, J, K, L		5200							
		90kW	P		6000							
25	LCT300H	Low, Std, Med	L, S, M	10000	4500		10000	3750		10000	3750	1200
		High	H		5125							
	LCT300H	15, 30, 45, 60kW	N, E, J, L		5200							
		90kW	P		6000							

*Use highest value between Heating and Cooling High CFM Max.

TABLE 26

COOLING MINIMUM AND MAXIMUM CFM

Unit	Cool 1 CFM Cooling Low CFM			Cool 4 CFM Cooling High CFM		
	De-fault	Min	Max	De-fault	Min	Max
156H	3380	1500	6250	5200	4000	6250
180H	3900	2000	7200	5400	5000	7200
210H	4550	2500	8400	6300	6000	8400
240H	5200	3000	9600	7200	6250	9600
300H	6500	3500	12000	9000	7000	12000

*Use Cooling High CFM Max

IX--VAV System

Units contain a supply air blower equipped with a variable frequency drive A96 (VFD) which varies supply air CFM. The supply air VFD (A96) is located in the control area. See FIGURE 39.

A-Start-Up

1 - A pressure transducer (A30) is shipped in a box in the blower compartment. Install the transducer according to manufacturer's instructions.

Note - *Make sure the transducer is installed in the main duct at least 2/3 of the distance away from the unit.*

2 - Two twisted pairs of shielded cable must be used to connect the pressure transducer. See FIGURE 38. J/P378 connector is hanging in the control box.

3 - Open all zone dampers and/or boxes.

4 - Locate the A55 Unit Controller. Refer to FIGURE 39.

5 - Use the mobile service app to calibrate the blower CFM. Select this menu to start the blower:

SETUP > TEST & BALANCE > BLOWER

The mobile app will display the percent of blower speed. Adjust blower speed percentage to meet design airflow specifications. Allow blower speed to stabilize.

6 - Press NEXT and follow the instructions to calibrate static pressure. If the static pressure meets the design specification, press NEXT again to set the setpoint. If the static pressure does not meet the design specification, adjust the pressure and press NEXT to set the setpoint.

7 - Record new setpoints in TABLE 27.

TABLE 27

RECORD ADJUSTED SETPOINTS

Parameter	Setpoint Description	Setpoint "wc	Display Setting
386	Smoke		
387	Ventilation		
388	Heating		
389	Cooling		

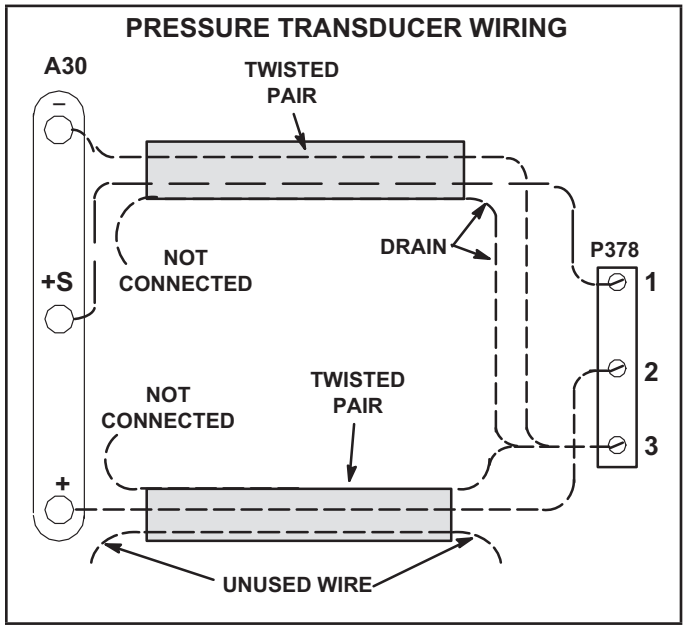


FIGURE 38

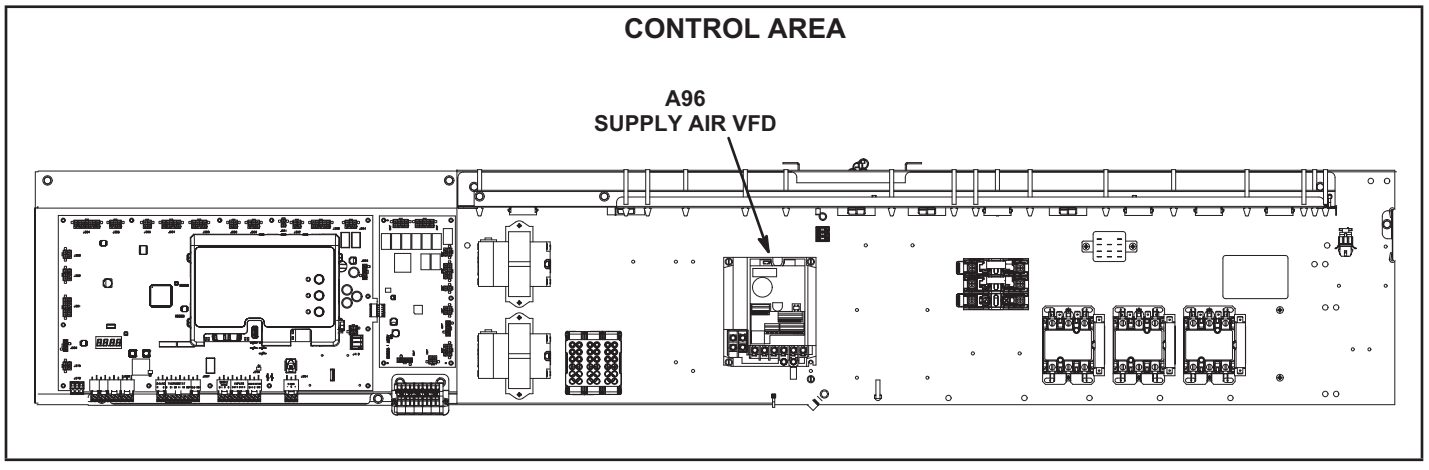


FIGURE 39

B-Unit Operation

Use the mobile app to check unit mechanical operation. See the Service - Test section of the Unit Controller manual.

C-Manual Supply Air VFD Bypass

IMPORTANT - All dampers must be open to prevent damage to duct work and dampers.

Note - *This section does not apply to units equipped with optional automatic VFD bypass. That option will automatically change from multi-stage air volume to constant air volume operation in the event of VFD failure.*

Manually change blower operation to constant air volume as follows:

1 - Disconnect all power to unit and **WAIT AT LEAST 10 MINUTES** before opening the VFD cover.

⚠ WARNING

ELECTRICAL SHOCK HAZARD.

STOP! Before you continue, make sure that power to the VFD has been off for at least 10 minutes. The capacitor in the VFD holds high voltage power for up to 10 minutes after power has been disconnected.

2 - Locate P246 and P247 connectors near the VFD. See FIGURE 40.

3 - Disconnect P246 from P246 (power in to VFD) and P247 from P247 (power out to blower). See FIGURE 41.

4 - Connect P246 to P247. See FIGURE 42.

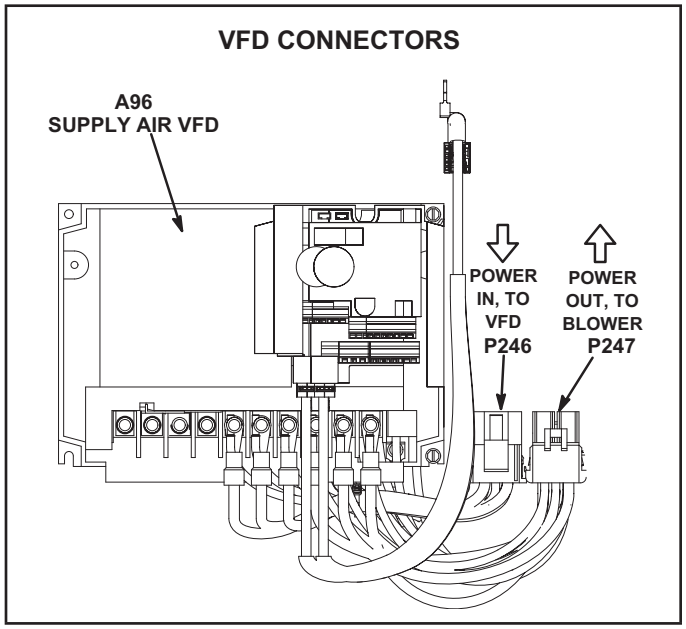


FIGURE 40

5 - Restore power to unit. Blower will operate in constant air volume (CAV) mode.

Note - *The indoor blower motor will start as soon as the main unit power is restored. In manual bypass, the blower will run regardless of thermostat signals until main unit power is turned off. Manual bypass is meant for emergency operation only and not long-term usage.*

6 - Check the indoor blower motor nameplate for full load amperage (FLA) value. Measure the amp readings from the indoor blower motor operating in bypass mode. If measured amps are higher than nameplate FLA value, decrease the CFM by opening (turning counterclockwise) the motor pulley. See FIGURE 23. Do not exceed minimum and maximum number of pulley turns as shown in table 5.

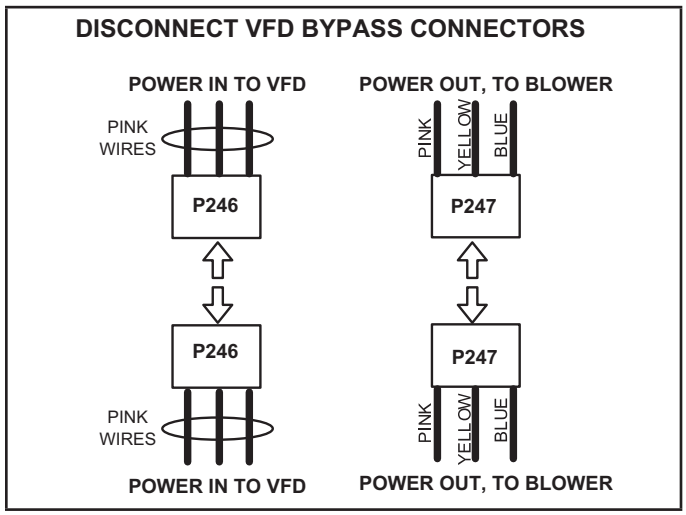


FIGURE 41

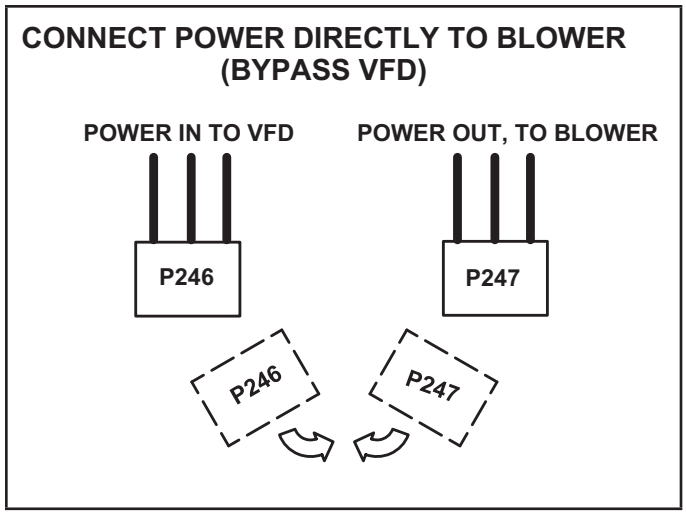


FIGURE 42

X-Decomissioning

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of recovered refrigerant. It is essential that electrical power is available befor the task is commenced.

Steps to ensure this are:

- Become familiar with the equipment and its operation,
- Isolate the system electrically,
- Ensure that before attempting the procedure that mechanical handling equipment is available, if required, for handling refrigerant cylinders, and that all personal protective equipment is available and being used correctly while the recovery process is supervised at all times by a competent person and that the recovery equipment and cylinders conform to the appropriate standards.

Additionally, pump down refrigerant system, if possible, and if a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system. Make sure that cylinders are situated on the scales before recovery takes place. Start the recovery machine and operate in accordance with instructions. Do not overfill cylinders (no more than 80 % volume liquid charge). Do not exceed the maximum working pressure of the cylinder, even temporarily. When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off. Recovered refrigerant shall not be charged into another refrigerating system unless it has been cleaned and checked.

Equipment shall be labeled stating that it has been decommissioned and emptied of refrigerant. The label shall be dated and signed. For appliances containing flammable refrigerants, ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

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.

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.

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, since flammability is a consideration. The following procedure shall be adhered to:

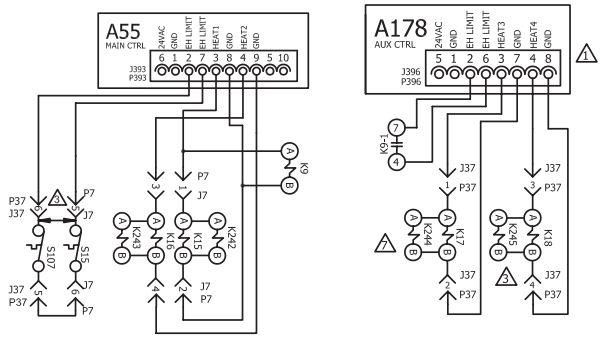
- Safely remove refrigerant following local and national regulations,
- Evacuate the circuit,
- Purge the circuit with inert gas,
- Evacuate,
- Purge with inert gas,
- Open the circuit.

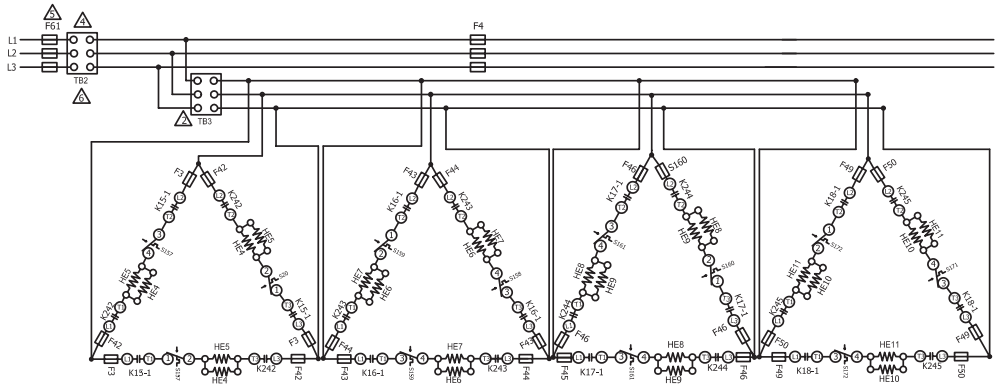
The refrigerant charge shall be recovered into the correct recovery cylinders if venting is not allowed by local and national codes. For appliances containing flammable refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants. This process might need to be repeated several times. Compressed air or oxygen shall not be used for purging refrigerant systems. Refrigerant 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. This process shall be repeated until no refrigerant is within the system. 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.

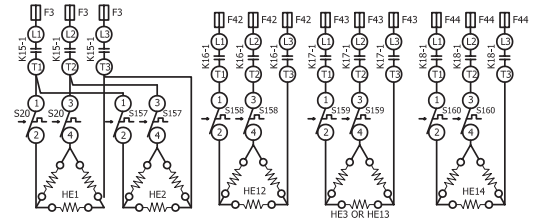
EHA 15/120 - Y VOLTAGE

J/P	JACK/PLUG
7	ELECTRIC HEAT CONTROL
37	ELECTRIC HEAT CONTROL

KEY	DESCRIPTION
A55	CONTROL, BOARD LENNOX
A178	BOARD, COMP 3 & 4, C3 2nd STAGE HEAT
F3	FUSE, ELECTRIC HEAT
F4	FUSE, UNIT
F42	FUSE, ELECTRIC HEAT 1 A, 2A
F43	FUSE, ELECTRIC HEAT 3
F44	FUSE, ELECTRIC HEAT 4
F45	FUSE, ELECTRIC HEAT 5
F46	FUSE, ELECTRIC HEAT 6
F49	FUSE, ELECTRIC HEAT 7
F50	FUSE, ELECTRIC HEAT 8
F61	FUSE, UNIT - SCCR
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
HE7	ELEMENT, ELECTRIC HEAT 7
HE8	ELEMENT, ELECTRIC HEAT 8
HE9	ELEMENT, ELECTRIC HEAT 9
HE10	ELEMENT, ELECTRIC HEAT 10
HE11	ELEMENT, ELECTRIC HEAT 11
HE12	ELEMENT, ELECTRIC HEAT 12
HE13	ELEMENT, ELECTRIC HEAT 13
HE14	ELEMENT, ELECTRIC HEAT 14
K9,-1	RELAY, HEAT
K15,-1	CONTACTOR, ELECTRIC HEAT 1,2
K16,-1	CONTACTOR, ELECTRIC HEAT 1A,2A
K17,-1	CONTACTOR, ELECTRIC HEAT 3,4
K18,-1	CONTACTOR, ELECTRIC HEAT 5,6
K242	CONTACTOR, ELECTRIC HEAT 1
K243	CONTACTOR, ELECTRIC HEAT 2
K244	CONTACTOR, ELECTRIC HEAT 3
K245	CONTACTOR, ELECTRIC HEAT 4
S15	SWITCH, LIMIT PRIMARY ELECTRIC HEAT
S20	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 1,2
S107	SWITCH, PRIMARY ELECTRIC HEAT
S157	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 2
S158	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 3
S159	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 4
S160	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 5
S161	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 6
S171	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 7
S172	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 8
TB2	TERMINAL STRIP, UNIT
TB3	TERMINAL STRIP, ELECTRIC HEAT







DESIGNATION	VOLTAGE
Y	208-230/60/3

C UNITS 156 TO 300
D UNITS 240 TO 360

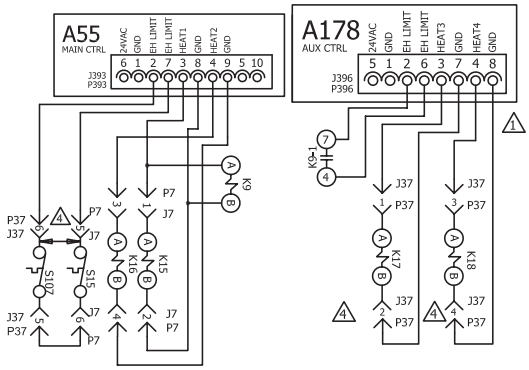
1. NOT USED ON 15 AND 30KW UNITS
2. TB3 IS USED IN SOME UNITS
3. REMOVE PLUG WHEN FIELD INSTALLING ELECTRIC HEAT
4. TB2, CB10 OR S48 MAY BE USED ON NON SCCR UNITS
5. F61 USED ON SCCR OPTION UNITS ONLY
6. TB2 IS USED IN SOME SCCR OPTION UNITS ONLY
7. ONLY USED ON 120 kW D-BOX UNITS

DENOTES OPTIONAL COMPONENTS

CHASSIS	KW	HE1	HE2	HE3	HE4	HE5	HE6	HE7	HE8	HE9	HE10	HE11	HE12	HE13	HE14
C	15	7.5	7.5												
C,D	30				15	15									
C,D	45	15											7.5	15	7.5
C,D	60	15											15	15	15
C,D	90	15		15			15	15			15	15			
D	120				15	15	15	15	15	15	15	15			

2024/03	WIRING DIAGRAM 538127-02	03/24
HEATING		
ELECTRIC HEAT E1EH, EHA - 15, 30, 45, 60, 90, 120 - Y		
SECTION A		REV 0
Supersedes 538127-01	New Form No. 538127-02	

EHA 15/120 - G & J VOLTAGE



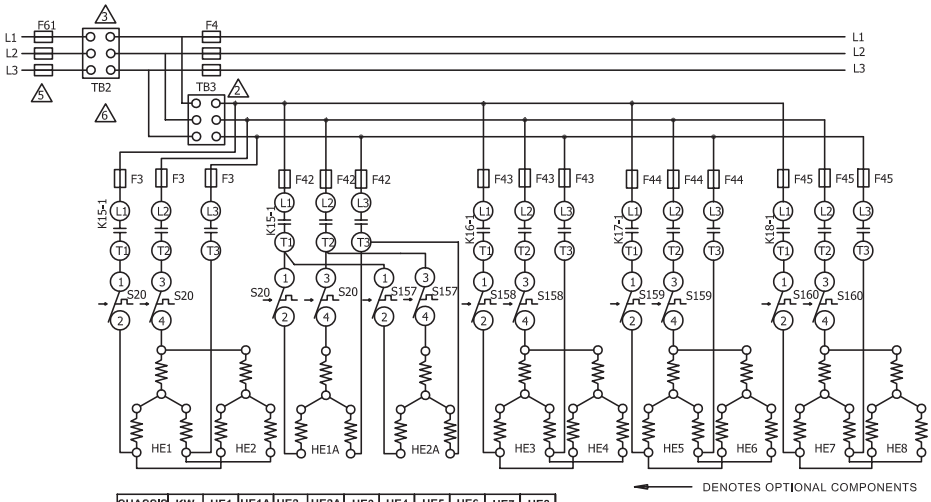
KEY	DESCRIPTION
A55	CONTROL, BOARD LENNOX
A178	BOARD,COMPRESSORS 3 & 4
F3	FUSE, ELECTRIC HEAT
F4	FUSE, UNIT
F42	FUSE, ELECTRIC HEAT 1 A, 2A
F43	FUSE, ELECTRIC HEAT 3, 4
F44	FUSE, ELECTRIC HEAT 5, 6
F45	FUSE, ELECTRIC HEAT 7, 8
HE1	ELEMENT, ELECTRIC HEAT 1
HE3	ELEMENT, ELECTRIC HEAT 3
HE4	ELEMENT, ELECTRIC HEAT 4
HE5	ELEMENT, ELECTRIC HEAT 5
HE7	ELEMENT, ELECTRIC HEAT 7
HE8	ELEMENT, ELECTRIC HEAT 8
K9,-1	RELAY, HEAT
K15,-1	CONTACTOR, ELECTRIC HEAT 1,2
K16,-1	CONTACTOR, ELECTRIC HEAT 1A,2A
K17,-1	CONTACTOR, ELECTRIC HEAT 3,4
K18,-1	CONTACTOR, ELECTRIC HEAT 5,6

S15	SWITCH, LIMIT PRIMARY ELECTRIC HEAT
S20	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 1,2
S107	SWITCH, PRIMARY ELECTRIC HEAT
S157	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 1A
S158	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 2A
S159	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 3,4
S160	SWITCH, LIMIT SECONDARY ELECTRIC HEAT 5,6
TB2	TERMINAL STRIP, UNIT
TB3	TERMINAL STRIP, ELECTRIC HEAT

J/P	DESCRIPTION
7	ELECTRIC HEAT CONTROL
37	ELECTRIC HEAT CONTROL

DESIGNATION	VOLTAGE
G	460/60/3
J	575/3

1. NOT USED ON 15 AND 30KW UNITS
2. TB3 IS USED IN SOME UNITS
3. TB2, S48 OR CB10 MAY BE USED
4. REMOVE JUMPER PLUG WHEN FIELD INSTALLING ELECTRIC HEAT
5. F61 USED ON UNITS WITH SCCR OPTION
6. TB2 IS USED IN SOME SCCR OPTION UNITS ONLY



CHASSIS	KW	HE1	HE1A	HE2	HE2A	HE3	HE4	HE5	HE6	HE7	HE8
C	15		7.5		7.5						
D	20		10		10						
CD	30		15		15						
D	40	10				10		10		10	
CD	45	15				7.5		15		7.5	
CD	60	15				15		15		15	
D	80	20			20			20	20		
CD	90	15				15	15	15		15	15
D	120	15		15		15	15	15	15	15	15

2025/01	WIRING DIAGRAM 538126-03	01/25
HEATING		
ELECTRIC HEAT LCT/LHT/LCX/LHX/SCH E1EH,EHA-15, 20, 30, 40, 45,60, 80, 90, 120 - G, J		
SECTION A		REV.0
Supersedes 538126-02	New Form No. 538126-03	

SEQUENCE OF OPERATION
EHA-15, 30, 45, 60, 90 - Y & G

The Y voltage diagram use elements configured in a Wye. The G and J voltage diagram use elements configured in a Delta. Both diagrams follow the following sequence of operation:

NOTE:T*wo electric heat sections are used in all 15kW through 90kW heaters. The heat sections are labelled first electric heat section (left side) and second electric heat section (right side). See FIGURE 27.*

NOTE: *In the case of EHA 15 and 30kW, the second heat section (right side) is a slave (only has electric heat elements and a limit). Line voltage is supplied to elements in both heat section one (left side) and two (right side) by the contactors in heat section one (left side).*

HEATING ELEMENTS:

1 - Terminal strip TB3 is energized when the unit disconnect closes. TB3 supplies line voltage to electric heat elements HE1 through HE14. Each heating element is protected by fuse F3.

FIRST STAGE HEAT:

2 - Heating demand initiates at W1 in thermostat.

3 - 24VAC is routed to the main control module A55. After A55 proves N.C. primary limits S15 (heat section one, left side), S107 (heat section two, right side), the electric heat contactor K15 and heat relay K9 are energized.

4 - N.O. contact K15-1 closes allowing the first bank of elements in heat section one (left side) to be energized.

5 - At the same time, N.O. contacts K9-1 close. A N.O. contact in A55 closes, energizing electric heat relay K17.

6 - N.O. contacts K17-1 close allowing the first set of elements in heat section two (right side) to be energized.

SECOND STAGE HEAT:

7 - With the first stage heat operating, an additional heating demand initiates at W2 in the thermostat.

8 - 24VAC is routed through the main control module A55, which in turn energizes the electric heat contactor K16.

9 - N.O. contacts K16-1 close allowing the second set of elements in heat section one (left side) to be energized.

10 - Simultaneous with step eight, a N.O. contact in the A55 Unit controller closes, allowing 24VAC to energize electric heat contactor K18.

11 - N.O. contacts K18-1 close allowing the second set of elements in heat section two (right side) to be energized.

END OF SECOND STAGE HEAT:

12 - Heating demand is satisfied. Terminal W2 in the thermostat is de-energized.

13 - Electric heat contactors K16 and K18 are de-energized.

14 - The second set of electric heat elements in heat sections one (left side) and two (right side) are de-energized.

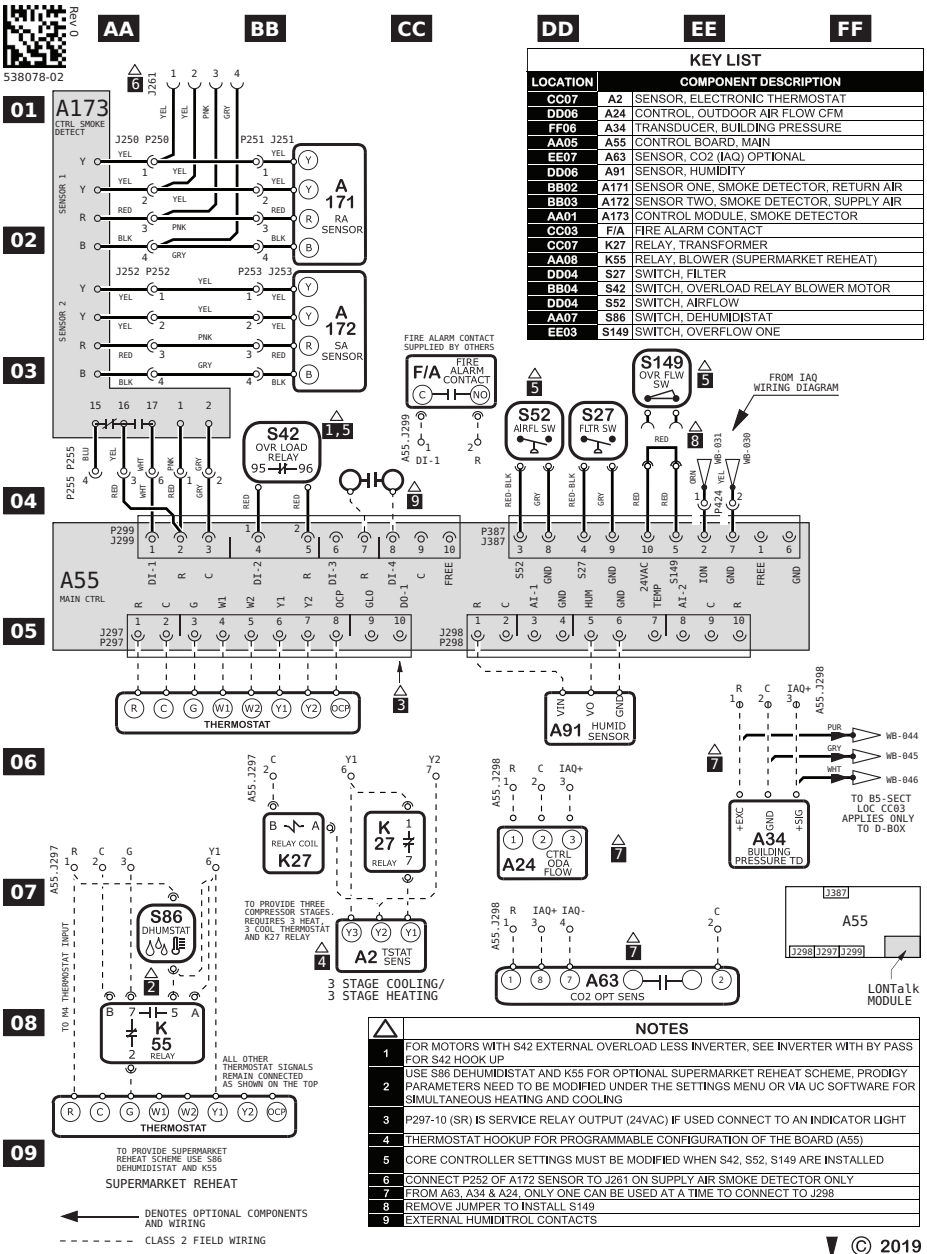
END OF FIRST STAGE HEAT:

15 - Heating demand is satisfied. Terminal W1 in the thermostat is de-energized.

16 - Electric heat contactors K15 and K17 are de-energized.

17 - The first set of electric heat elements in heat sections one (left side) and two (right side) are de-energized.

THERMOSTAT



KEY LIST		
LOCATION		COMPONENT DESCRIPTION
CC07	A2	SENSOR, ELECTRONIC THERMOSTAT
DD06	A24	CONTROL, OUTDOOR AIR FLOW CFM
FF06	A34	TRANSDUCER, BUILDING PRESSURE
AA05	A55	CONTROL BOARD, MAIN
EE07	A63	SENSOR, CO2 (IAQ) OPTIONAL
DD06	A91	SENSOR, HUMIDITY
BB02	A171	SENSOR ONE, SMOKE DETECTOR, RETURN AIR
BB03	A172	SENSOR TWO, SMOKE DETECTOR, SUPPLY AIR
AA01	A173	CONTROL MODULE, SMOKE DETECTOR
CC03	F/A	FIRE ALARM CONTACT
CC07	K27	RELAY, TRANSFORMER
AA08	K55	RELAY, BLOWER (SUPERMARKET REHEAT)
DD04	S27	SWITCH, FILTER
BB04	S42	SWITCH, OVERLOAD RELAY BLOWER MOTOR
DD04	S52	SWITCH, AIRFLOW
AA07	S86	SWITCH, DEHUMIDISTAT
EE03	S149	SWITCH, OVERFLOW ONE

NOTES	
1	FOR MOTORS WITH S42 EXTERNAL OVERLOAD LESS INVERTER, SEE INVERTER WITH BY PASS FOR S42 HOOK UP
2	USE S86 DEHUMIDISTAT AND K55 FOR OPTIONAL SUPERMARKET REHEAT SCHEME, PRODIGY PARAMETERS NEED TO BE MODIFIED UNDER THE SETTINGS MENU OR VIA UC SOFTWARE FOR SIMULTANEOUS HEATING AND COOLING
3	P297-10 (SR) IS SERVICE RELAY OUTPUT (24VAC) IF USED CONNECT TO AN INDICATOR LIGHT
4	THERMOSTAT HOOKUP FOR PROGRAMMABLE CONFIGURATION OF THE BOARD (A55)
5	CORE CONTROLLER SETTINGS MUST BE MODIFIED WHEN S42, S52, S149 ARE INSTALLED
6	CONNECT P252 OF A172 SENSOR TO J261 ON SUPPLY AIR SMOKE DETECTOR ONLY
7	FROM A63, A34 & A24, ONLY ONE CAN BE USED AT A TIME TO CONNECT TO J298
8	REMOVE JUMPER TO INSTALL S149
9	EXTERNAL HUMIDITROL CONTACTS

Model: LC, LG, LH, LD Series RTU
Thermostat
Voltage: All Voltages
Supersedes: 538078-01 Form No: 538078-02 Rev: 0

HEATING	COOLING	COOLING	ACCS	ACCS
SECTION A	SECTION B	SECTION B3/5	SECTION C	SECTION D

WIRING DIAGRAM FLOW

7x10 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-012295C	04-03-2024	MXR6	MXT5	ORIGINATED AT PD&R CARROLLTON, TX

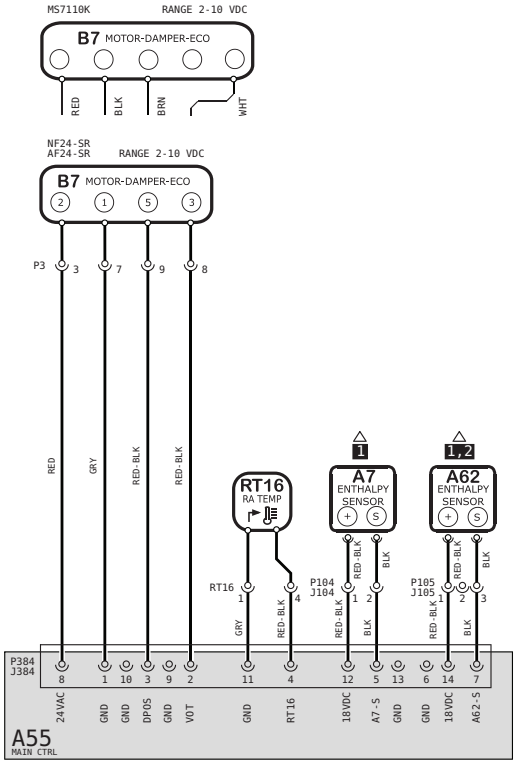
ECONOMIZER

Rev 2

538072-01

AA BB CC DD

01 02 03 04 05 06 07 08 09



△	NOTES
1	A7 AND A62 NOT USED FOR SENSIBLE TEMPERATURE CONTROL
2	FOR UNIT DIFFERENTIAL ENTHALPY CONTROL, ADD A62 RETURN AIR ENTHALPY SENSOR

KEY LIST		
LOCATION	COMPONENT DESCRIPTION	
CC05	A7	SENSOR, SOLID STATE ENTHALPY
AA06	A55	CONTROL BOARD, MAIN
DD05	A62	SENSOR, ENTHALPY INDOOR
BB02	B7	MOTOR, DAMPER ECONOMIZER
CC05	RT16	SENSOR, RETURN AIR TEMP

10

Model: LC,LG,LH,LD,SC,SG Series
Economizer & Motorized OAD
Voltage: All Voltages
Supersedes: N/A Form No: 538072-01 Rev: 2

HTG SEC A	CLG SEC B	CLG SEC B3	ACCS SEC C	ACCS SEC D

WIRING DIAGRAM FLOW

5x10 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-008594	10/15/2020	RV	MXR6	ORIGINATED AT PD&R CARROLLTON, TX
001	CN-010356B	03/24/2022	MXR6	JAL21	UPDATED APPLICABLE MODEL NUMBERS.
002	CN-012457P	03/06/2024	AXL	AAH	A) ADDED SC, SG TO MODELS

Sequence of Operation LCT156

1 - Line voltage from TB13 energizes transformer T1 and T18. Transformer T1 and T18 provides 24VACpower to the main controller A55. The transformers also provides 24VAC power to the unit cooling, heating and blower controls and thermostat.

ECONOMIZER OPERATION

2 - The A55 Unit Controller receives a demand and energizes exhaust fan relay K65 and K231 with 24VAC at 50% (travel) outside air damper open (adjustable).

3 - N.O. K65-1, K65-2, K231-01 and K231-02 close, energizing exhaust fan motors B10 and B11.

1ST STAGE COOLING

4 - First stage cooling demand energizes Y1 and G in the thermostat. G energizes blower, if blower is not already running.

5 - 24VAC is routed to the A55 Unit Controller. After A55 proves N.C. low pressure switch S87 and high pressure switch S4, compressor contactor K1 and L34 are energized.

6 - A55 energizes outdoor fan B21 directly and fans B4 and B5 through K10.

7 - N.O. K1 closes energizing compressor B1, and N.C. K1-52 opens denergizing HR1.

2ND STAGE COOLING

8 - Second stage cooling demand energizes Y2.

9 - After A55 proves N.C. low pressure switch S88 and N.C. high pressure switch S7, contacotor K2 is energized.

10 - N.O. K2 closes energizing compressor B2 and K2-52 opens de-energizing crankcase heater HR2.

BLOWER OPERATION

With By Pass Installed - Active

1 - Main control A55 de-energizes relays K202 and K203

2 - K202 contacts open to interrupt power to B3 blower motor from A96 blower inverter.

3 - Main control A55 energizes relay K203-7.

4 - K203-1 N.C. contacts close allowing power to K3.

5 - K3 contacts close to allow power to B3 blower motor.

With By Pass Installed - Inactive

1 - Main control A55 energizes relays K202 and K203.

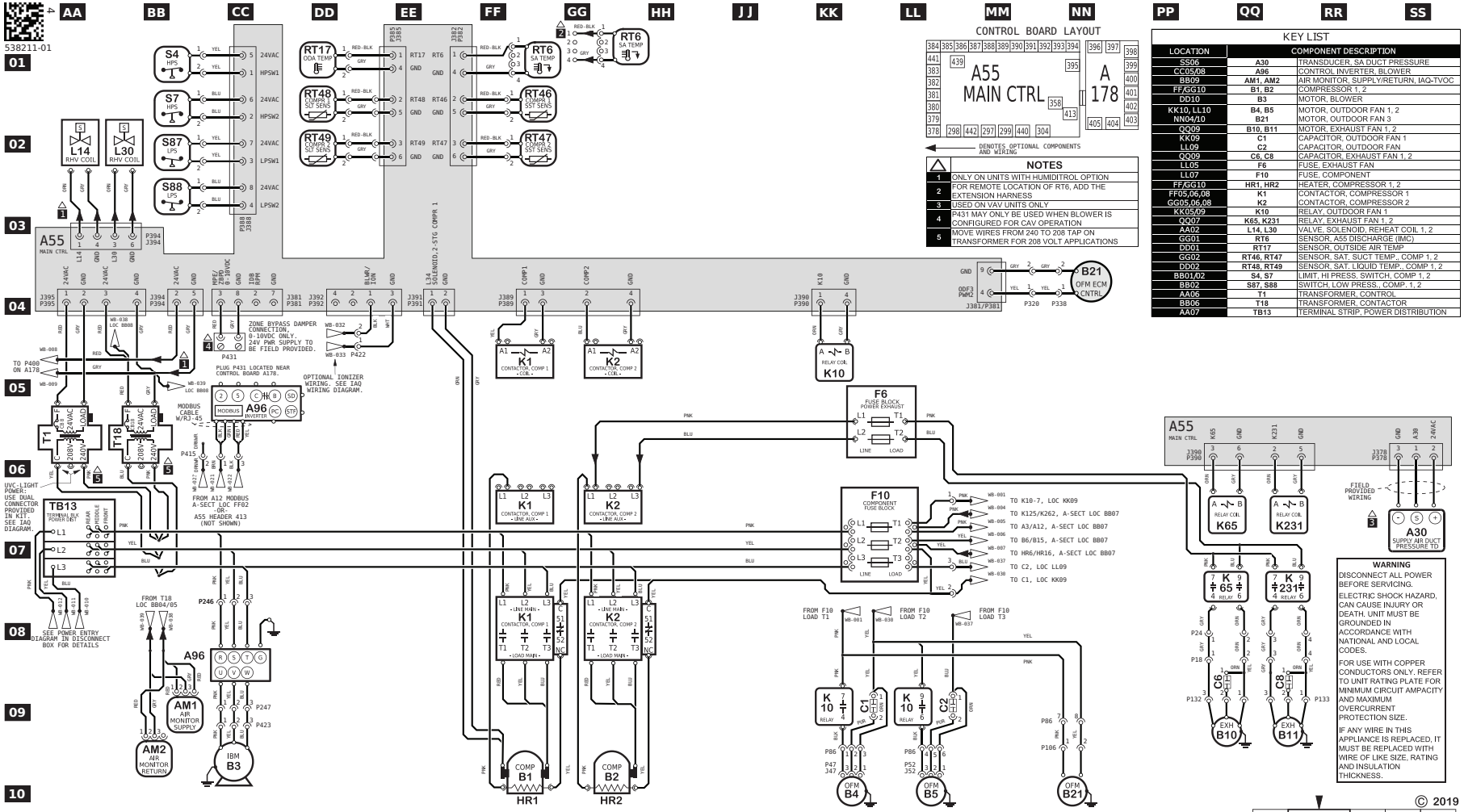
2 - K203-1 N.C. contacts open to de-energize K3 relay coil. K3 contacts open to interrupt power to B3 blower motor through K3 N.O. contacts.

3 - K202 contacts close to allow power to B3 blower motor from A96 blower inverter.

By-Pass Not Installed

1 - Control inverter A96 energizes B3.

LGT156 Y VOLT DIAGRAM - NO BYPASS



KEY LIST	
LOCATION	COMPONENT DESCRIPTION
SS06	A30 — TRANSDUCER, SA DUCT PRESSURE
CC05,08	A96 — CONTROL,INVERTER, BLOWER
BB09	AM1, AM2 — AIR MONITOR, SUPPLY/RETURN, IAQ-TVOC
FF,GG10	B1, B2 — COMPRESSOR 1, 2
DD10	B3 — MOTOR, BLOWER
KK10, LL10 NN04,10	B4, B5 — MOTOR, OUTDOOR FAN 1, 2 B21 — MOTOR, OUTDOOR FAN 3
QQ09	B10, B11 — MOTOR, EXHAUST FAN 1, 2
KK09	C1 — CAPACITOR, OUTDOOR FAN 1
LL09	C2 — CAPACITOR, OUTDOOR FAN
QQ09	C6, C8 — CAPACITOR, EXHAUST FAN 1, 2
LL05	F6 — FUSE, EXHAUST FAN
LL07	F10 — FUSE, COMPONENT
FF,GG10	HR1, HR2 — HEATER, COMPRESSOR 1, 2
FF05,06,08 GG05,06,08	K1 — CONTACTOR, COMPRESSOR 1 K2 — CONTACTOR, COMPRESSOR 2
KK05,09	K10 — RELAY, OUTDOOR FAN 1
QQ07	K65, K231 — RELAY, EXHAUST FAN 1, 2
AA02	L14, L30 — VALVE, SOLENOID, REHEAT COIL 1, 2
GG01	RT6 — SENSOR, A55 DISCHARGE (IMC)
DD01	RT17 — SENSOR, OUTSIDE AIR TEMP
GG02	RT46, RT47 — SENSOR, SAT, SUCT TEMP.. COMP 1, 2
DD02	RT48, RT49 — SENSOR, SAT, LIQUID TEMP.. COMP 1, 2
BB01,02	S4, S7 — LIMIT, HI PRESS. SWITCH, COMP 1, 2
BB02	S87, S88 — SWITCH, LOW PRESS., COMP. 1, 2
AA06	T1 — TRANSFORMER, CONTROL
BB06	T18 — TRANSFORMER, CONTACTOR
AA07	TB13 — TERMINAL STRIP, POWER DISTRIBUTION

NOTES	
1	ONLY ON UNITS WITH HUMIDITROL OPTION
2	FOR REMOTE LOCATION OF RT6, ADD THE EXTENSION HARNESS
3	USED ON VAV UNITS ONLY
4	P431 MAY ONLY BE USED WHEN BLOWER IS CONFIGURED FOR CAV OPERATION
5	MOVE WIRES FROM 240 TO 208 TAP ON TRANSFORMER FOR 208 VOLT APPLICATIONS

Model: LGT, LCT 156H - Y-VOLT
COOLING - MSAV NO BYPASS -OR- VAV - 2 COMPRESSORS 3 CONDENSER FANS

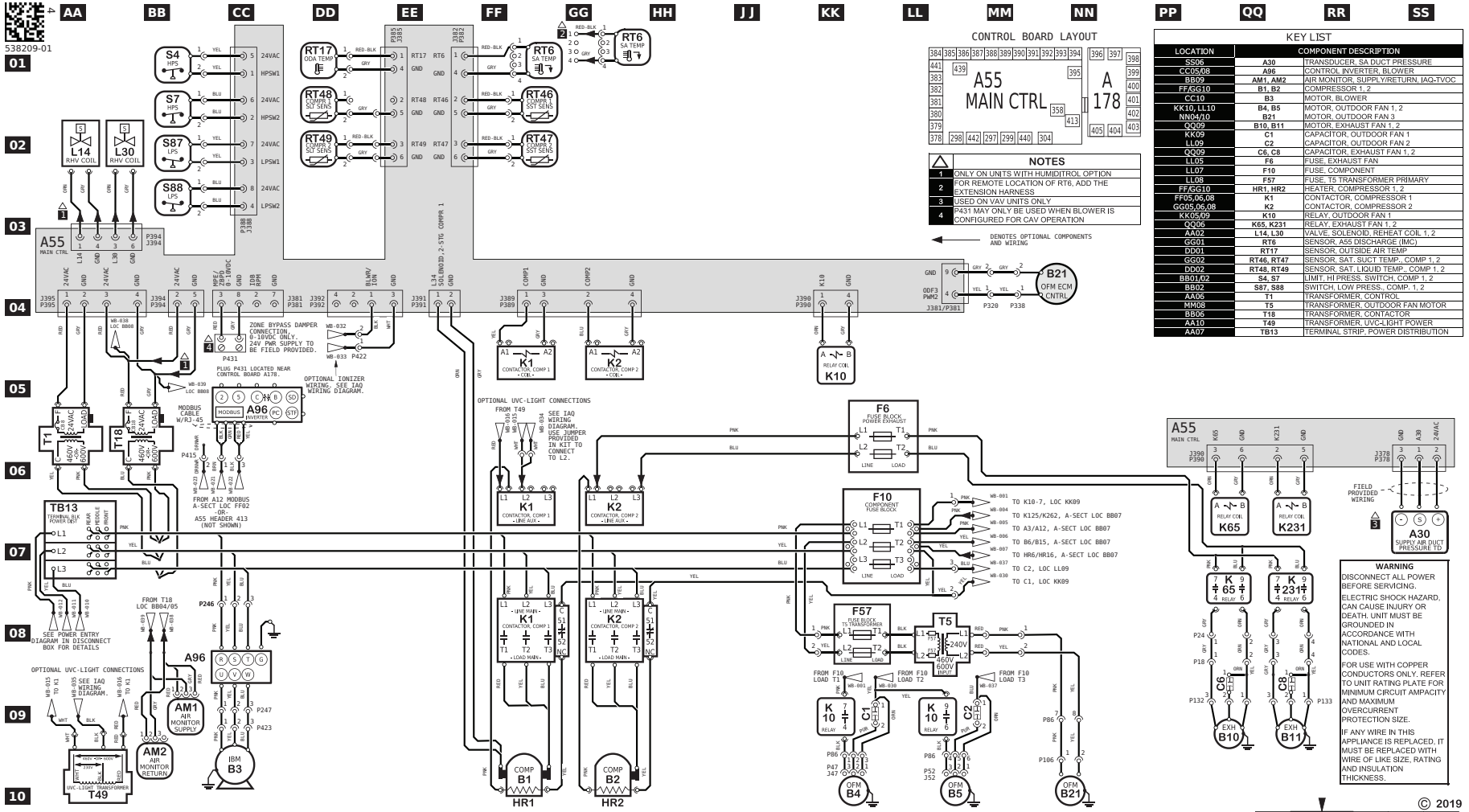
Voltage: 208-240V/3~/60Hz (Y)
Supersedes: N/A Form No: 538211-01 Rev: 4

538211-01

10x17 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-010356	06-14-2022	MXR6	JAL21	ORIGINATED AT PD&R CARROLLTON, TX
003	CN-010356P	11-01-2022	MXR6	JAL21	A) CHANGED CONTROL BOARD LAYOUT PICTORIAL TO INCLUDE A178.
004	CN-012015A	04-10-2024	MXR6	JAL21	UPDATED GND SYMBOLS ON MOTORS AND INVERTER

LGT156 G & J VOLT DIAGRAM - NO BYPASS



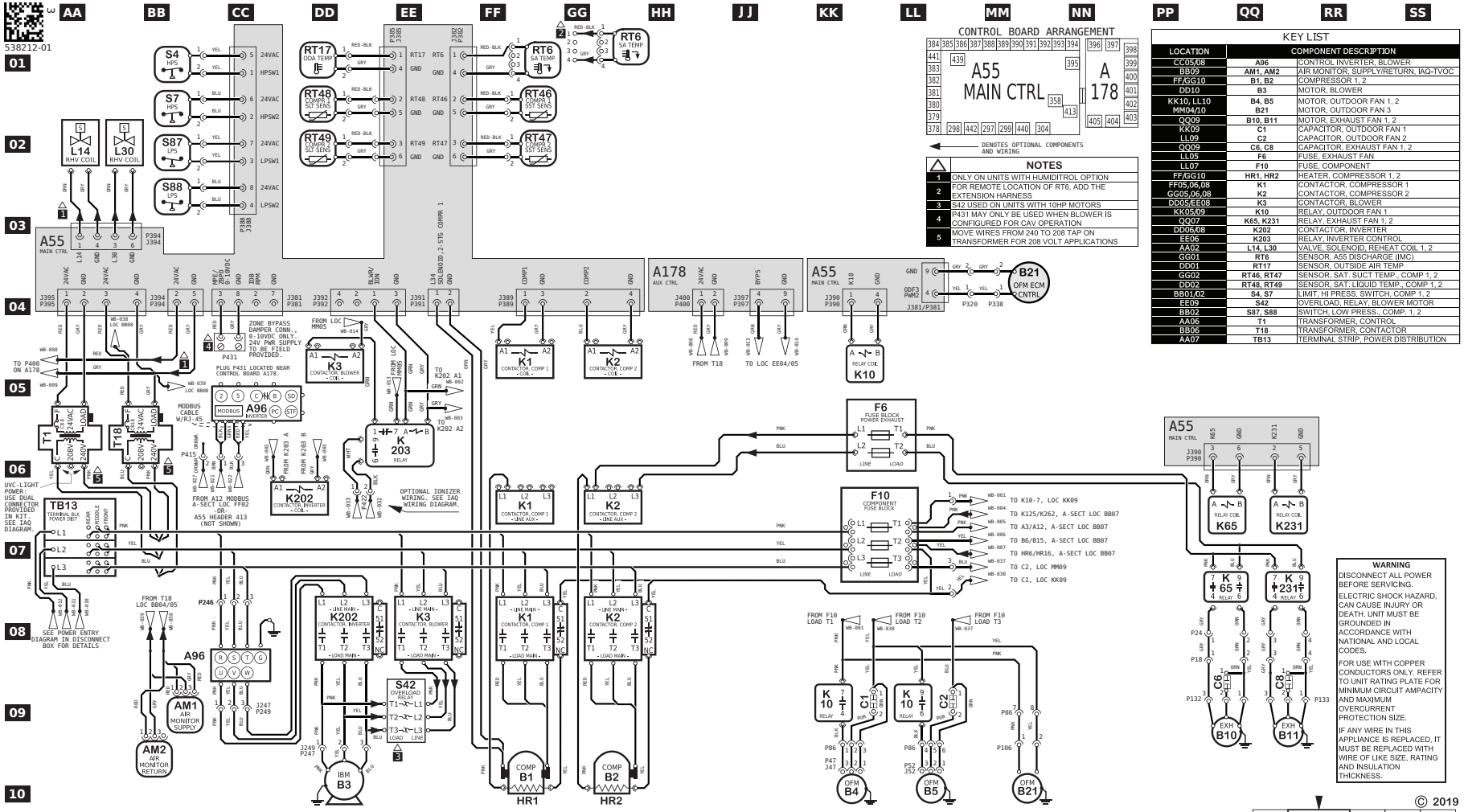
Model: LGT, LCT 156H - G, J-VOLT
COOLING - MSAV NO BYPASS -OR- VAV - 2 COMPRESSORS 3 CONDENSER FANS

Voltage: 460V/3~/60Hz (G), 575V/3~/60Hz (J)
Supersedes: N/A Form No: 538209-01 Rev: 4

10x17 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-010356	06-14-2022	MXR6	JAL21	ORIGINATED AT PD&R CARROLLTON, TX
003	CN-010356P	11-01-2022	MXR6	JAL21	A) CHANGED CONTROL BOARD LAYOUT PICTORIAL TO INCLUDE A178.
004	CN-012015A	04-10-2024	MXR6	JAL21	UPDATED GND SYMBOLS ON MOTORS AND INVERTER

LGT156 Y VOLT DIAGRAM - WITH BYPASS



KEY LIST		
LOCATION	COMPONENT DESCRIPTION	
CC05,08	A96	CONTROL INVERTER, BLOWER
BB09	AM1, AM2	AIR MONITOR, SUPPLY/RETURN, IAQ-TVOC
FF,GG10	B1, B2	COMPRESSOR 1, 2
DD10	B3	MOTOR, BLOWER
KK10, LL10 MM04/10	B4, B5	MOTOR, OUTDOOR FAN 1, 2
	B21	MOTOR, OUTDOOR FAN 3
QQ09	B10, B11	MOTOR, EXHAUST FAN 1, 2
KK09	C1	CAPACITOR, OUTDOOR FAN 1
LL09	C2	CAPACITOR, OUTDOOR FAN 2
QQ09	C6, C8	CAPACITOR, EXHAUST FAN 1, 2
LL05	F6	FUSE, EXHAUST FAN
LL07	F10	FUSE, COMPONENT
FF,GG10	HR1, HR2	HEATER, COMPRESSOR 1, 2
FF05,06,08	K1	CONTACTOR, COMPRESSOR 1
GG05,06,08	K2	CONTACTOR, COMPRESSOR 2
DD05/EE08	K3	CONTACTOR, BLOWER
KK05/09	K10	RELAY, OUTDOOR FAN 1
QQ07	K65, K231	RELAY, EXHAUST FAN 1, 2
DD06/08	K202	CONTACTOR, INVERTER
EE06	K203	RELAY, INVERTER CONTROL
AA02	L14, L30	VALVE, SOLENOID, REHEAT COIL 1, 2
GG01	RT6	SENSOR, A55 DISCHARGE (IMC)
DD01	RT17	SENSOR, OUTSIDE AIR TEMP
GG02	RT46, RT47	SENSOR, SAT. SUCT TEMP., COMP 1, 2
DD02	RT48, RT49	SENSOR, SAT, LIQUID TEMP., COMP 1, 2
BB01,02	S4, S7	LIMIT, HI PRESS. SWITCH, COMP 1, 2
EE09	S42	OVERLOAD, RELAY, BLOWER MOTOR
BB02	S87, S88	SWITCH, LOW PRESS., COMP. 1, 2
AA06	T1	TRANSFORMER, CONTROL
BB06	T18	TRANSFORMER, CONTACTOR
AA07	TB13	TERMINAL STRIP, POWER DISTRIBUTION

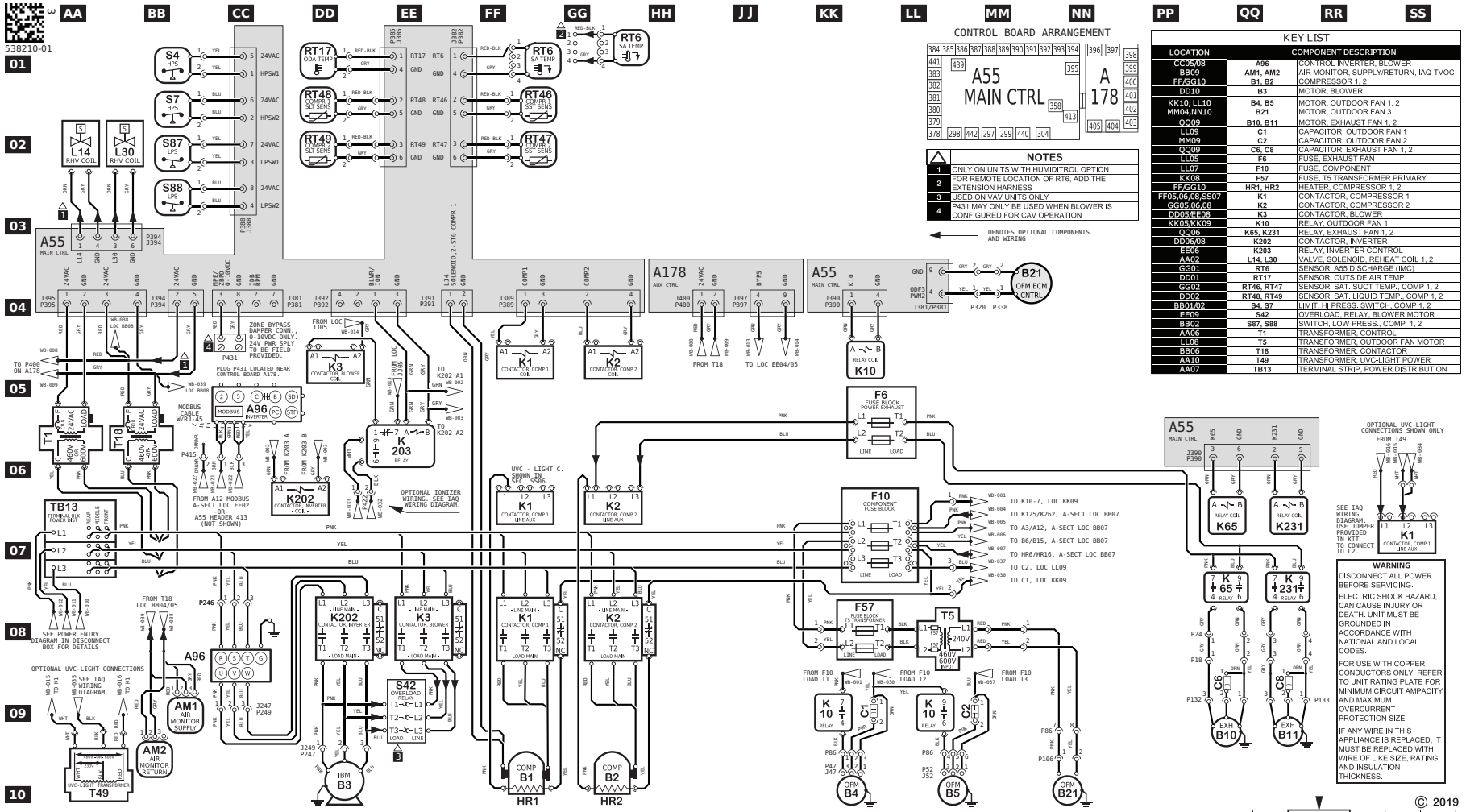
Model: LGT, LCT 156H - Y-VOLT
COOLING - MSAV WITH BYPASS - 2 COMPRESSORS 3 CONDENSER FANS

Voltage: 208-240V/3~/60Hz (Y)
Supersedes: N/A Form No: 538212-01 Rev: 3

10x17 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-010356	06-20-2022	MXR6	JAL21	ORIGINATED AT PD&R CARROLLTON, TX
002	CN-010356L	09-12-2022	MXR6	JAL21	A) ADDED K10-6/-9 TO CONDENSER FAN SECTION. P86-7/-8 WAS P87-1/-2.
003	CN-012015A	04-10-2024	MXR6	JAL21	UPDATED GND SYMBOLS ON MOTORS AND INVERTER

LGT156 G & J VOLT DIAGRAM - WITH BYPASS



Model: LGT, LCT 156H - G, J-VOLT
COOLING - MSAV WITH BYPASS - 2 COMPRESSORS 3 CONDENSER FANS

Voltage: 460V/3~/60Hz (G), 575V/3~/60Hz (J)
Supersedes: N/A Form No: 538210-01 Rev: 3

10x17 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-010356	06-14-2022	MXR6	JAL21	ORIGINATED AT PD&R CARROLLTON, TX
002	CN-010356L	09-12-2022	MXR6	JAL21	A) ADDED K10-6/-9 TO CONDENSER FAN SECTION. P86-7/-8 WAS P87-1/-2.
003	CN-012015A	01-10-2024	MXR6	JAL21	UPDATED GND SYMBOLS ON MOTORS AND INVERTER

Sequence of Operation LCT180

1 - 1Line voltage from TB13 energizes transformer T1 and T18. Transformer T1 and T18 provides 24VAC power to the main controller A55. The transformers also provide 24VAC power to the unit cooling, heating and blower controls and thermostat

ECONOMIZER OPERATION

2 - The A55 Unit Controller receives a demand and energizes exhaust fan relay K65 and K231 with 24VAC at 50% (travel) outside air damper open (adjustable).

3 - N.O. K65-1, K65-2, K231-01 and K231-02 close, energizing exhaust fan motors B10 and B11.

1ST STAGE COOLING

4 - First stage cooling demand energizes Y1 and G in the thermostat. G energizes blower, if blower is not already running (see step 3).

5 - 24VAC is routed to the A55 Unit Controller. After A55 proves N.C. low pressure switch S87 and high pressure switch S4, compressor contactor K1 is energized. After A55 proves N.C. low pressure switch S88 and high pressure switch S7, compressor contactor K2 is energized.

6 - A55 energizes outdoor fan B5 directly and fan B4 through K10. A178 energizes outdoor fan B22 directly and fan B21 through K149.

7 - N.O. K1 closes energizing compressor B1, and N.C. K1-52 opens de-nergizing HR1.

8 - N.O. K2 closes energizing compressor B2, and N.C. K2-52 opens denergizing HR2.

2ND STAGE COOLING

9 - Second stage cooling demand energizes Y2.

10 - After A55 proves N.C. low pressure switch S97 and high pressure switch S28, compressor contactor K14 is energized.

11 - N.O. K14 closes energizing compressor B13, and N.C. K14-52 opens denergizing HR5.

BLOWER OPERATION

With By Pass Installed - Active

1 - Main control A55 de-energizes relays K202 and K203

2 - K202 contacts open to interrupt power to B3 blower motor from A96 blower inverter.

3 - Main control A55 energizes relay K203-7.

4 - K203-1 N.C. contacts close allowing power to K3.

5 - K3 contacts close to allow power to B3 blower motor.

With By Pass Installed - Inactive

1 - Main control A55 energizes relays K202 and K203.

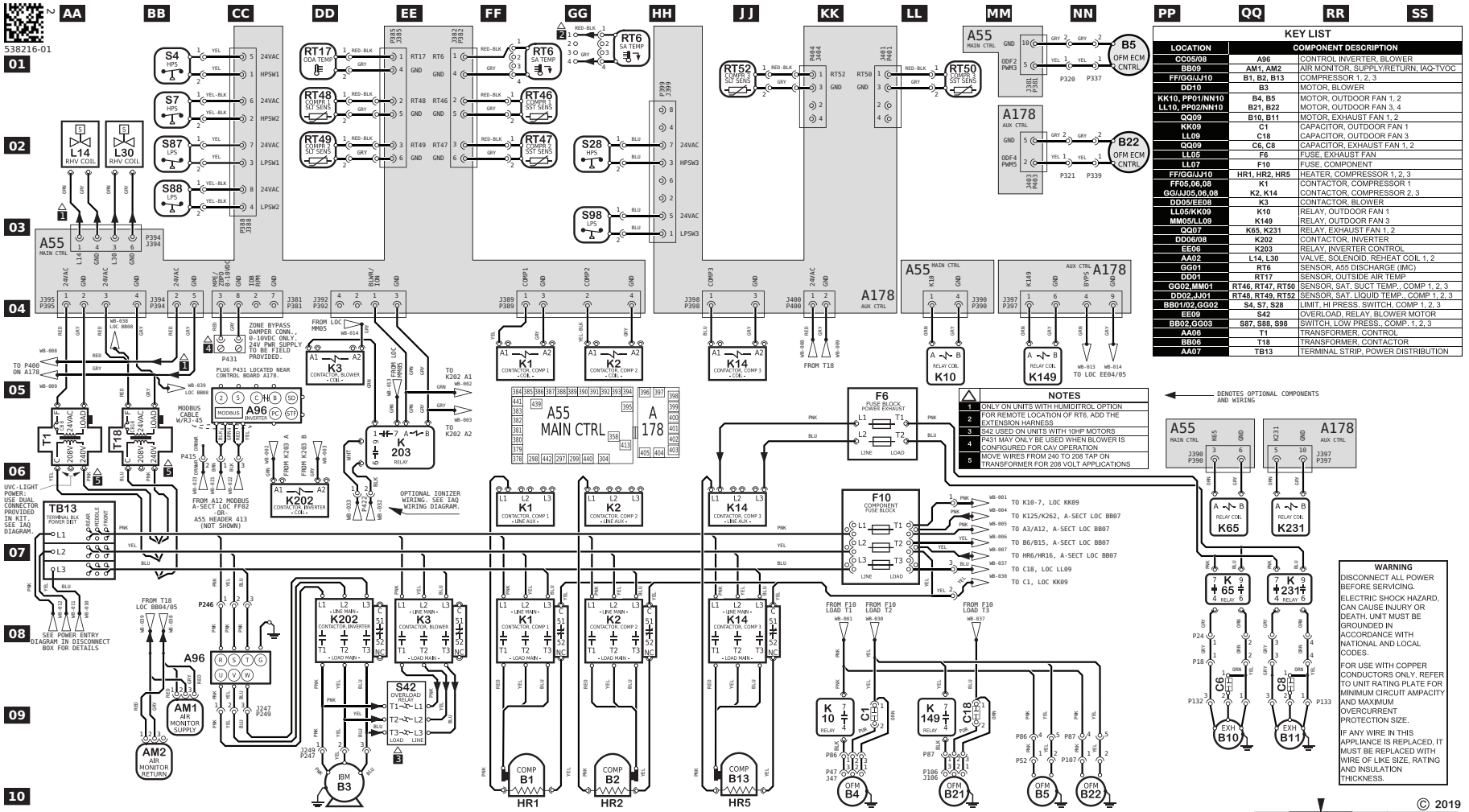
2 - K203-1 N.C. contacts open to de-energize K3 relay coil. K3 contacts open to interrupt power to B3 blower motor through K3 N.O. contacts.

3 - K202 contacts close to allow power to B3 blower motor from A96 blower inverter.

By-Pass Not Installed

1 - Control inverter A96 energizes B3.

LGT180 Y VOLT DIAGRAM - WITH BYPASS



KEY LIST

LOCATION	COMPONENT DESCRIPTION	
CC05/08	A96	CONTROL INVERTER, BLOWER
BB09	AM1, AM2	AIR MONITOR, SUPPLY/RETURN, IAQ-TVOC
FF/GG/JJ10	B1, B2, B13	COMPRESSOR 1, 2, 3
DD10	B3	MOTOR, BLOWER
KK10, PP01/NN10	B4, B5	MOTOR, OUTDOOR FAN 1, 2
LL10, PP02/NN10	B21, B22	MOTOR, OUTDOOR FAN 3, 4
QQ09	B10, B11	MOTOR, EXHAUST FAN 1, 2
KK09	C1	CAPACITOR, OUTDOOR FAN 1
LL09	C18	CAPACITOR, OUTDOOR FAN 3
QQ09	C6, C8	CAPACITOR, EXHAUST FAN 1, 2
LL05	F6	FUSE, EXHAUST FAN
LL07	F10	FUSE, COMPONENT
FF/GG/JJ10	HR1, HR2, HR5	HEATER, COMPRESSOR 1, 2, 3
FF05,06,08	K1	CONTACTOR, COMPRESSOR 1
GG/JJ05,06,08	K2, K14	CONTACTOR, COMPRESSOR 2, 3
DD05/EE08	K3	CONTACTOR, BLOWER
LL05/KK09	K10	RELAY, OUTDOOR FAN 1
MM05/LL09	K149	RELAY, OUTDOOR FAN 3
QQ07	K65, K231	RELAY, EXHAUST FAN 1, 2
DD06/08	K202	CONTACTOR, INVERTER
EE06	K203	RELAY, INVERTER CONTROL
AA02	L14, L30	VALVE, SOLENOID, REHEAT COIL 1, 2
GG01	RT6	SENSOR, A55 DISCHARGE (IMC)
DD01	RT17	SENSOR, OUTSIDE AIR TEMP
GG02,MM01	RT46, RT47, RT50	SENSOR, SAT. SUCT TEMP., COMP 1, 2, 3
DD02,JJ01	RT48, RT49, RT52	SENSOR, SAT. LIQUID TEMP., COMP 1, 2, 3
BB01/02,GG02	S4, S7, S28	LIMIT, HI PRESS. SWITCH, COMP 1, 2, 3
EE09	S42	OVERLOAD, RELAY, BLOWER MOTOR
BB02,GG03	S87, S88, S98	SWITCH, LOW PRESS., COMP. 1, 2, 3
AA06	T1	TRANSFORMER, CONTROL
BB06	T18	TRANSFORMER, CONTACTOR
AA07	TB13	TERMINAL STRIP, POWER DISTRIBUTION

NOTES

1. ONLY ON UNITS WITH HUMIDITROL OPTION
2. FOR REMOTE LOCATION OF RT6, ADD THE EXTENSION HARNESS
3. S42 USED ON UNITS WITH 10HP MOTORS
4. P431 MAY ONLY BE USED WHEN BLOWER IS CONFIGURED FOR CAV OPERATION
5. MOVE WIRES FROM 240 TO 208 TAP ON TRANSFORMER FOR 208 VOLT APPLICATIONS

WARNING

DISCONNECT ALL POWER BEFORE SERVICING.

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

FOR USE WITH COPPER CONDUCTORS ONLY. REFER TO UNIT RATING PLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM OVERCURRENT PROTECTION SIZE.

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

Model: LGT, LCT 180H - Y-VOLT
COOLING - MSAV WITH BYPASS - 3 COMPRESSORS 4 CONDENSER FANS

Voltage: 208-240V/3~/60Hz (Y)
Supersedes: N/A Form No: 538216-01 Rev: 2

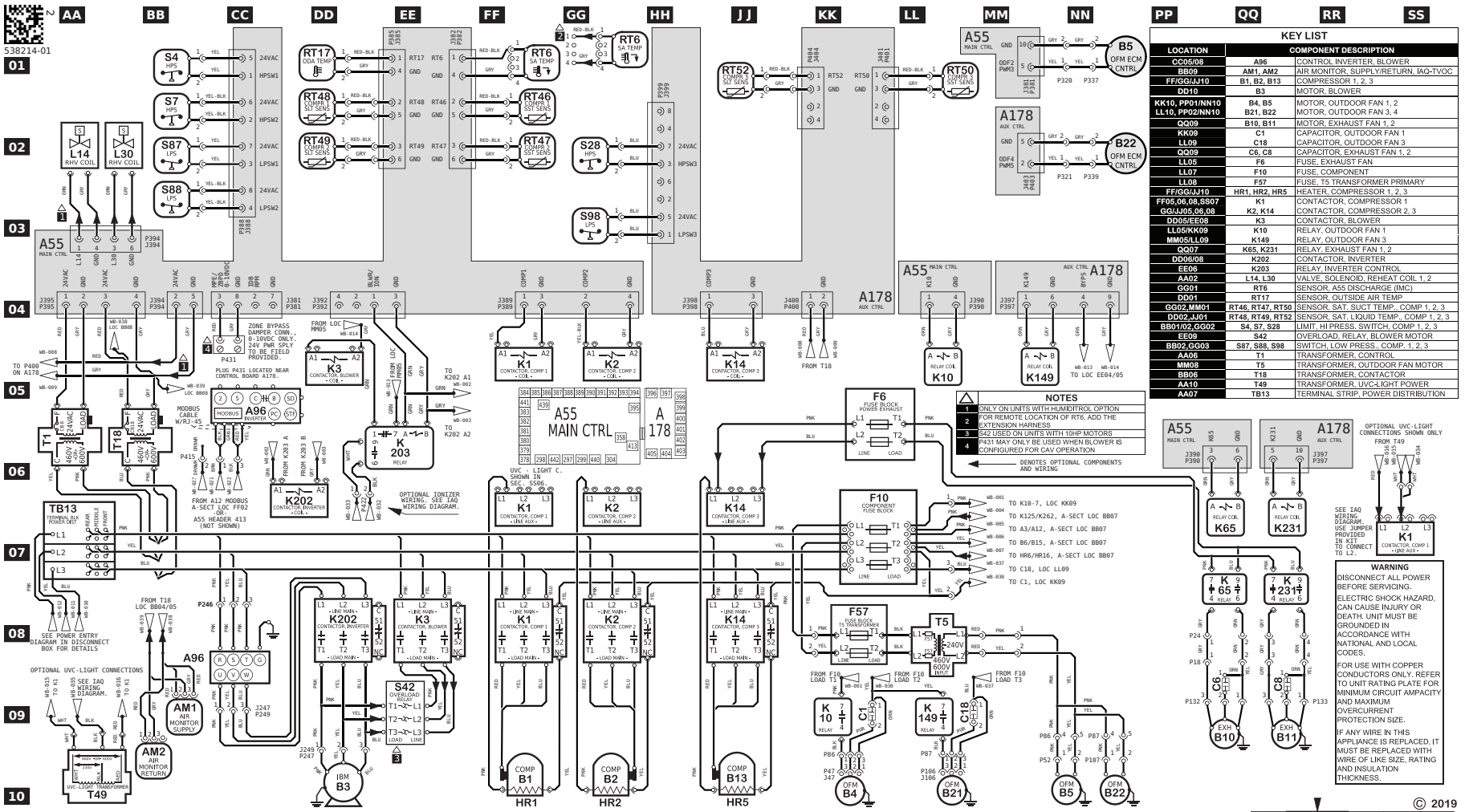
WIRING DIAGRAM FLOW

HEATING	COOLING	COOLING	ACCS	ACCS
SECTION A	SECTION B	SECTION B3	SECTION C	SECTION D

10x17 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-010356	06-20-2022	MXR6	JAL21	ORIGINATED AT PD&R CARROLLTON, TX
001	CN-010356E	07-26-2022	MXR6	JAL21	A) REVERSED HIGH VOLTAGE WIRING ON T18 TRANSFORMER.
002	CN-012015A	04-11-2024	MXR6	JAL21	UPDATED GND SYMBOLS ON MOTORS AND INVERTER

LGT180 G & J VOLT DIAGRAM - WITH BYPASS



LOCATION	COMPONENT DESCRIPTION	
CC05/08	A96	CONTROL INVERTER, BLOWER
BB09	AM1, AM2	AIR MONITOR, SUPPLY/RETURN, IAQ-TVOC
FF/GG/JJ10	B1, B2, B13	COMPRESSOR 1, 2, 3
DD10	B3	MOTOR, BLOWER
KK10, PP01/NN10 LL10, PP02/NN10	B4, B5 B21, B22	MOTOR, OUTDOOR FAN 1, 2 MOTOR, OUTDOOR FAN 3, 4
QQ09	B10, B11	MOTOR, EXHAUST FAN 1, 2
KK09	C1	CAPACITOR, OUTDOOR FAN 1
LL09	C18	CAPACITOR, OUTDOOR FAN 3
QQ09	C6, C8	CAPACITOR, EXHAUST FAN 1, 2
LL05	F6	FUSE, EXHAUST FAN
LL07	F10	FUSE, COMPONENT
LL08	F57	FUSE, T5 TRANSFORMER PRIMARY
FF/GG/JJ10	HR1, HR2, HR5	HEATER, COMPRESSOR 1, 2, 3
FF05,06,08,SS07 GG/JJ05,06,08	K1 K2, K14	CONTACTOR, COMPRESSOR 1 CONTACTOR, COMPRESSOR 2, 3
DD05/EE08	K3	CONTACTOR, BLOWER
LL05/KK09	K10	RELAY, OUTDOOR FAN 1
MM05/LL09	K149	RELAY, OUTDOOR FAN 3
QQ07	K65, K231	RELAY, EXHAUST FAN 1, 2
DD06/08	K202	CONTACTOR, INVERTER
EE06	K203	RELAY, INVERTER CONTROL
AA02	L14, L30	VALVE, SOLENOID, REHEAT COIL 1, 2
GG01	RT6	SENSOR, A55 DISCHARGE (IMC)
DD01	RT17	SENSOR, OUTSIDE AIR TEMP
GG02,MM01	RT46, RT47, RT50	SENSOR, SAT. SUCT TEMP., COMP 1, 2, 3
DD02,JJ01	RT48, RT49, RT52	SENSOR, SAT. LIQUID TEMP., COMP 1, 2, 3
BB01/02,GG02	S4, S7, S28	LIMIT, HI PRESS, SWITCH, COMP 1, 2, 3
EE09	S42	OVERLOAD, RELAY, BLOWER MOTOR
BB02,GG03	S87, S88, S98	SWITCH, LOW PRESS., COMP. 1, 2, 3
AA06	T1	TRANSFORMER, CONTROL
MM08	T5	TRANSFORMER, OUTDOOR FAN MOTOR
BB06	T18	TRANSFORMER, CONTACTOR
AA10	T49	TRANSFORMER, UVC-LIGHT POWER
AA07	TB13	TERMINAL STRIP, POWER DISTRIBUTION

1	ONLY ON UNITS WITH HUMIDITROL OPTION
2	FOR REMOTE LOCATION OF RT6, ADD THE EXTENSION HARNESS
3	S42 USED ON UNITS WITH 10HP MOTORS
4	P431 MAY ONLY BE USED WHEN BLOWER IS CONFIGURED FOR CAV OPERATION

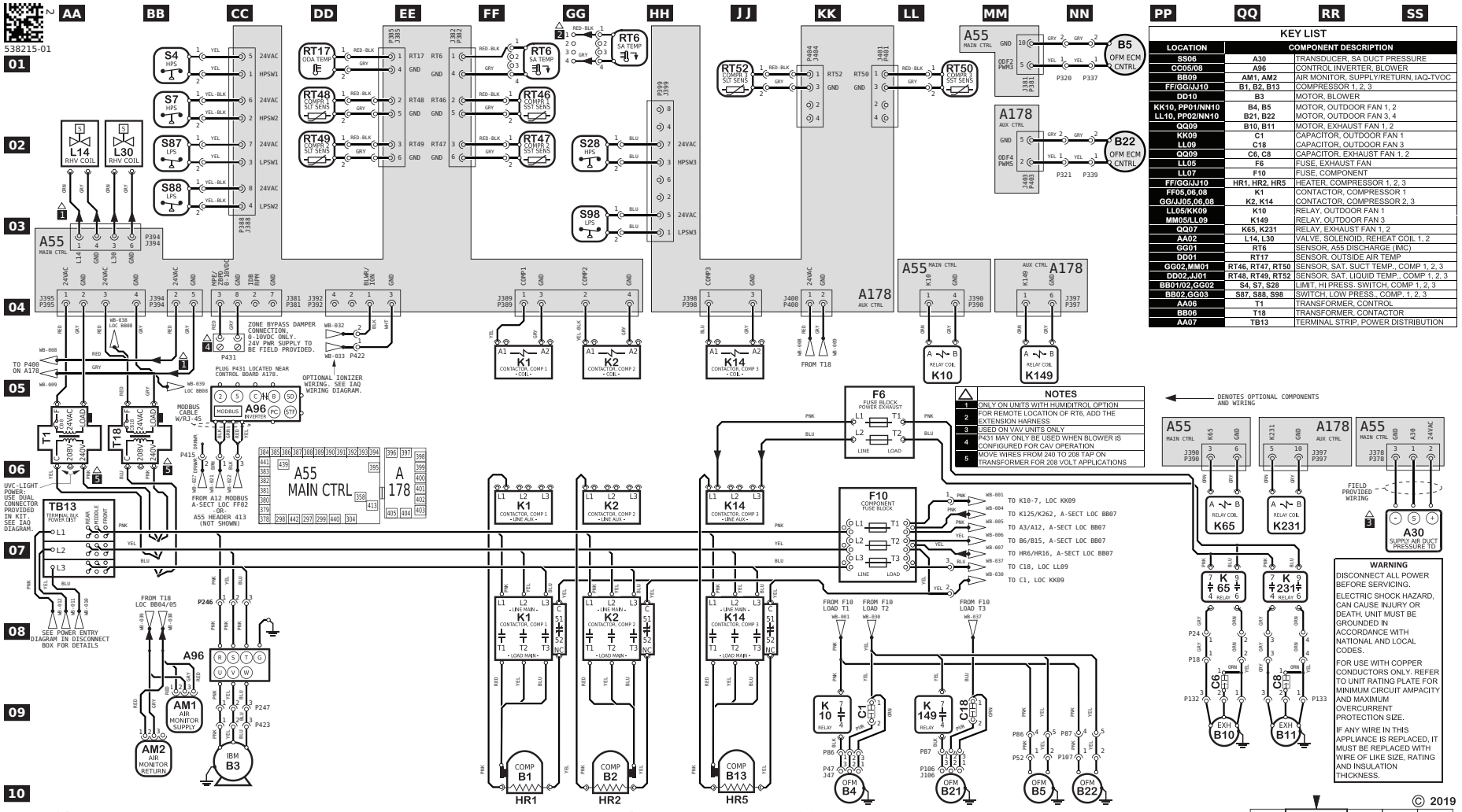
Model: LGT, LCT 180H - G, J-VOLT
COOLING - MSAV WITH BYPASS - 3 COMPRESSORS 4 CONDENSER FANS

Voltage: 460V/3~/60Hz (G), 575V/3~/60Hz (J)
Supersedes: N/A Form No: 538214-01 Rev: 2

10x17 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-010356	06-20-2022	MXR6	JAL21	ORIGINATED AT PD&R CARROLLTON, TX
001	CN-010356E	07-26-2022	MXR6	JAL21	A) REVERSED HIGH VOLTAGE WIRING ON T18 TRANSFORMER.
002	CN-012015A	04-10-2024	MXR6	JAL21	UPDATED GND SYMBOLS ON MOTORS AND INVERTER

LGT180 Y VOLT DIAGRAM - NO BYPASS



KEY LIST

LOCATION	COMPONENT DESCRIPTION	
SS06	A30	TRANSDUCER, SA DUCT PRESSURE
CC05/08	A96	CONTROL INVERTER, BLOWER
BB09	AM1, AM2	AIR MONITOR, SUPPLY/RETURN, IAQ-TVOC
FF/GG/JJ10	B1, B2, B13	COMPRESSOR 1, 2, 3
DD10	B3	MOTOR, BLOWER
KK10, PP01/NN10 LL10, PP02/NN10	B4, B5 B21, B22	MOTOR, OUTDOOR FAN 1, 2 MOTOR, OUTDOOR FAN 3, 4
QQ09	B10, B11	MOTOR, EXHAUST FAN 1, 2
KK09	C1	CAPACITOR, OUTDOOR FAN 1
LL09	C18	CAPACITOR, OUTDOOR FAN 3
QQ09	C6, C8	CAPACITOR, EXHAUST FAN 1, 2
LL05	F6	FUSE, EXHAUST FAN
LL07	F10	FUSE, COMPONENT
FF/GG/JJ10	HR1, HR2, HR5	HEATER, COMPRESSOR 1, 2, 3
FF05,06,08 GG/JJ05,06,08	K1 K2, K14	CONTACTOR, COMPRESSOR 1 CONTACTOR, COMPRESSOR 2, 3
LL05/KK09	K10	RELAY, OUTDOOR FAN 1
MM05/LL09	K149	RELAY, OUTDOOR FAN 3
QQ07	K65, K231	RELAY, EXHAUST FAN 1, 2
AA02	L14, L30	VALVE, SOLENOID, REHEAT COIL 1, 2
GG01	RT6	SENSOR, A55 DISCHARGE (IMC)
DD01	RT17	SENSOR, OUTSIDE AIR TEMP
GG02,MM01	RT46, RT47, RT50	SENSOR, SAT, SUCT TEMP., COMP 1, 2, 3
DD02,JJ01	RT48, RT49, RT52	SENSOR, SAT, LIQUID TEMP., COMP 1, 2, 3
BB01/02,GG02	S4, S7, S28	LIMIT, HI PRESS: SWITCH, COMP 1, 2, 3
BB02,GG03	S87, S88, S98	SWITCH, LOW PRESS., COMP, 1, 2, 3
AA06	T1	TRANSFORMER, CONTROL
BB06	T18	TRANSFORMER, CONTACTOR
AA07	TB13	TERMINAL STRIP, POWER DISTRIBUTION

NOTES

1	ONLY ON UNITS WITH HUMIDITROL OPTION
2	FOR REMOTE LOCATION OF RT6, ADD THE EXTENSION HARNESS
3	USED ON VAV UNITS ONLY
4	P431 MAY ONLY BE USED WHEN BLOWER IS CONFIGURED FOR CAV OPERATION
5	MOVE WIRES FROM 240 TO 208 TAP ON TRANSFORMER FOR 208 VOLT APPLICATIONS

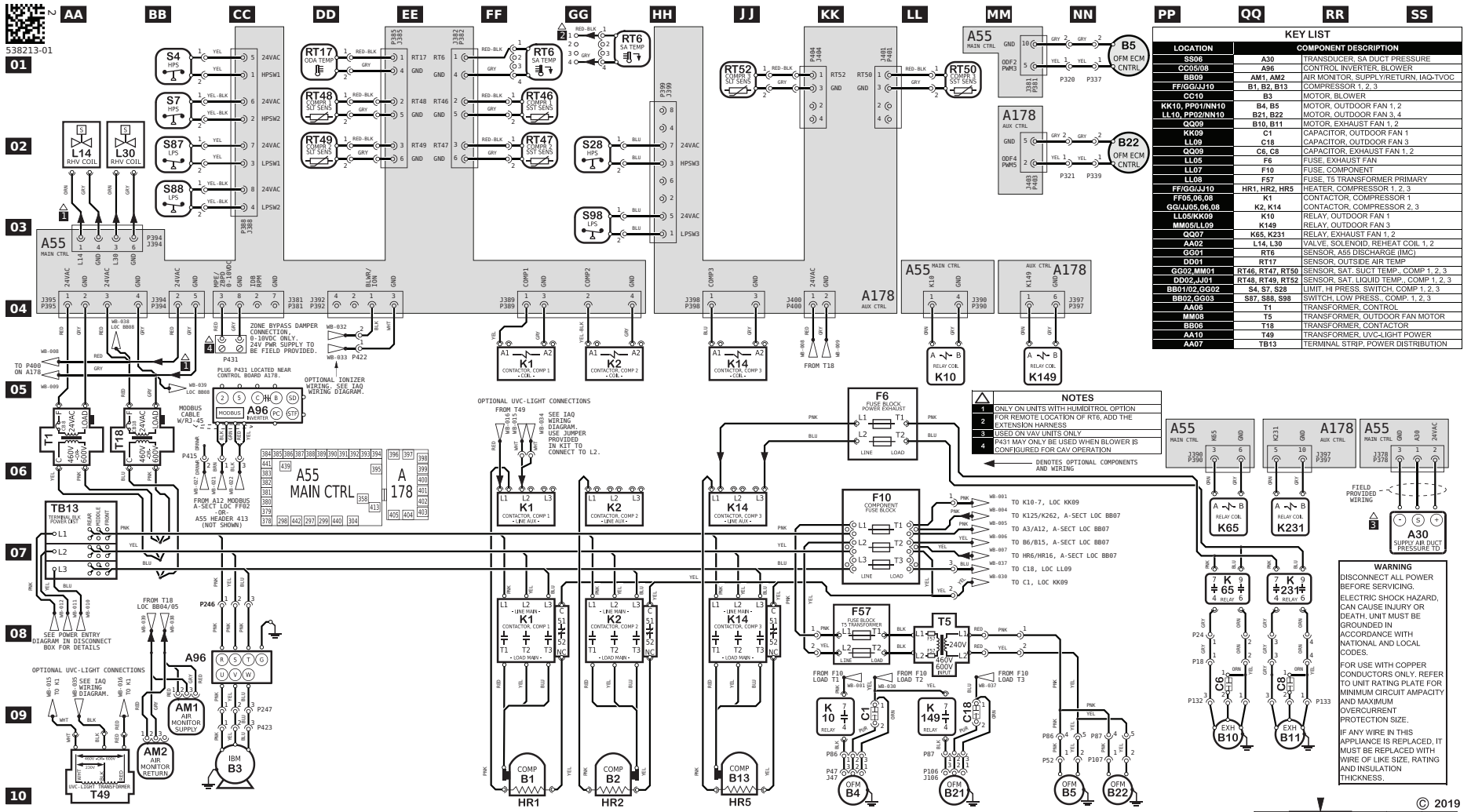
Model: LGT, LCT 180H - Y-VOLT
COOLING - MSAV NO BYPASS -OR- VAV - 3 COMPRESSORS 4 CONDENSER FANS

Voltage: 208-240V/3~/60Hz (Y)
Supersedes: N/A Form No: 538215-01 Rev: 2

10x17 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-010356	06-20-2022	MXR6	JAL21	ORIGINATED AT PD&R CARROLLTON, TX
001	CN-010356E	07-26-2022	MXR6	JAL21	A) REVERSED HIGH VOLTAGE WIRING ON T18 TRANSFORMER.
002	CN-012015A	04-11-2024	MXR6	JAL21	UPDATED GND SYMBOLS ON MOTORS AND INVERTER

LGT180 G & J VOLT DIAGRAM - NO BYPASS



NOTES	
1	ONLY ON UNITS WITH HUMIDITROL OPTION
2	FOR REMOTE LOCATION OF RT6, ADD THE EXTENSION HARNESS
3	USED ON VAV UNITS ONLY
4	P431 MAY ONLY BE USED WHEN BLOWER IS CONFIGURED FOR CAV OPERATION

KEY LIST	
LOCATION	COMPONENT DESCRIPTION
SS06	A30 — TRANSDUCER, SA DUCT PRESSURE
CC05/08	A96 — CONTROL INVERTER, BLOWER
BB09	AM1, AM2 — AIR MONITOR, SUPPLY/RETURN, IAQ-TVOC
FF/GG/JJ10	B1, B2, B13 — COMPRESSOR 1, 2, 3
CC10	B3 — MOTOR, BLOWER
KK10, PP01/NN10	B4, B5 — MOTOR, OUTDOOR FAN 1, 2
LL10, PP02/NN10	B21, B22 — MOTOR, OUTDOOR FAN 3, 4
QQ09	B10, B11 — MOTOR, EXHAUST FAN 1, 2
KK09	C1 — CAPACITOR, OUTDOOR FAN 1
LL09	C18 — CAPACITOR, OUTDOOR FAN 3
QQ09	C6, C8 — CAPACITOR, EXHAUST FAN 1, 2
LL05	F6 — FUSE, EXHAUST FAN
LL07	F10 — FUSE, COMPONENT
LL08	F57 — FUSE, T5 TRANSFORMER PRIMARY
FF/GG/JJ10	HR1, HR2, HR5 — HEATER, COMPRESSOR 1, 2, 3
FF05,06,08	K1 — CONTACTOR, COMPRESSOR 1
GG/JJ05,06,08	K2, K14 — CONTACTOR, COMPRESSOR 2, 3
LL05/KK09	K10 — RELAY, OUTDOOR FAN 1
MM05/LL09	K149 — RELAY, OUTDOOR FAN 3
QQ07	K65, K231 — RELAY, EXHAUST FAN 1, 2
AA02	L14, L30 — VALVE, SOLENOID, REHEAT COIL 1, 2
GG01	RT6 — SENSOR, A55 DISCHARGE (IMC)
DD01	RT17 — SENSOR, OUTSIDE AIR TEMP
GG02,MM01	RT46, RT47, RT50 — SENSOR, SAT. SUCT TEMP., COMP 1, 2, 3
DD02,JJ01	RT48, RT49, RT52 — SENSOR, SAT. LIQUID TEMP., COMP 1, 2, 3
BB01/02,GG02	S4, S7, S28 — LIMIT, HI PRESS. SWITCH, COMP 1, 2, 3
BB02,GG03	S87, S88, S98 — SWITCH, LOW PRESS., COMP. 1, 2, 3
AA06	T1 — TRANSFORMER, CONTROL
MM08	T5 — TRANSFORMER, OUTDOOR FAN MOTOR
BB06	T18 — TRANSFORMER, CONTACTOR
AA10	T49 — TRANSFORMER, UVC-LIGHT POWER
AA07	TB13 — TERMINAL STRIP, POWER DISTRIBUTION

WARNING

DISCONNECT ALL POWER BEFORE SERVICING.

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

FOR USE WITH COPPER CONDUCTORS ONLY: REFER TO UNIT RATING PLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM OVERCURRENT PROTECTION SIZE.

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

Model: LGT, LCT 180H - G, J-VOLT
COOLING - MSAV NO BYPASS -OR- VAV - 3 COMPRESSORS 4 CONDENSER FANS

Voltage: 460V/3~/60Hz (G), 575V/3~/60Hz (J)
Supersedes: N/A Form No: 538213-01 Rev: 2

WIRING DIAGRAM FLOW

HEATING	COOLING	COOLING	ACCS	ACCS
SECTION A	SECTION B	SECTION B3	SECTION C	SECTION D

10x17 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-010356	06-20-2022	MXR6	JAL21	ORIGINATED AT PD&R CARROLLTON, TX
001	CN-010356E	07-26-2022	MXR6	JAL21	A) REVERSED HIGH VOLTAGE WIRING ON T18 TRANSFORMER.
002	CN-012015A	04-10-2024	MXR6	JAL21	UPDATED GND SYMBOLS ON MOTORS AND INVERTER

Sequence of Operation LCT210

1 - Line voltage from TB13 energizes transformer T1 and T18. Transformer T1 and T18 provides 24VAC power to the main controller A55. The transformers also provide 24VAC power to the unit cooling, heating and blower controls and thermostat.

ECONOMIZER OPERATION

2 - The A55 Unit Controller receives a demand and energizes exhaust fan relay K65 and K231 with 24VAC at 50% (travel) outside air damper open (adjustable).

3 - N.O. K65-1, K65-2, K231-01 and K231-02 close, energizing exhaust fan motors B10 and B11.

1ST STAGE COOLING

4 - First stage cooling demand energizes Y1 and G in the thermostat. G energizes blower, if blower is not already running.

5 - 24VAC is routed to the A55 Unit Controller. After A55 proves N.C. low pressure switch S87, and S88 and N.C. high pressure switch S4 and S7, compressor contactors K1 and K2 are energized.

6 - A55 energizes outdoor fan B5 directly, and fan B4 through K10.

7 - N.O. K1 closes energizing compressor B1, and N.C. K1-52 opens de-energizing HR1.

8 - N.O. K2 closes energizing compressor B2, and N.C. K2-52 opens de-energizing HR2.

2ND STAGE COOLING

9 - Second stage cooling demand energizes Y2.

10 - After A55 proves N.C. low pressure switches S97 & S98 and N.C. high pressure switches S28 & S96, contactors K14 and K146 are energized.

11 - A178 energizes outdoor fan B22 directly, and B22 through K149.

12 - N.O. K14 closes energizing compressor B13 and K14-52 opens de-energizing crankcase heater HR5.

13 - N.O. K146 closes energizing compressor B20 and K146-52 opens de-energizing crankcase heater HR11.

BLOWER OPERATION

With By Pass Installed - Active

1 - Main control A55 de-energizes relays K202 and K203

2 - K202 contacts open to interrupt power to B3 blower motor from A96 blower inverter.

3 - Main control A55 energizes relay K203-7.

4 - K203-1 N.C. contacts close allowing power to K3.

5 - K3 contacts close to allow power to B3 blower motor.

With By Pass Installed - Inactive

1 - Main control A55 energizes relays K202 and K203.

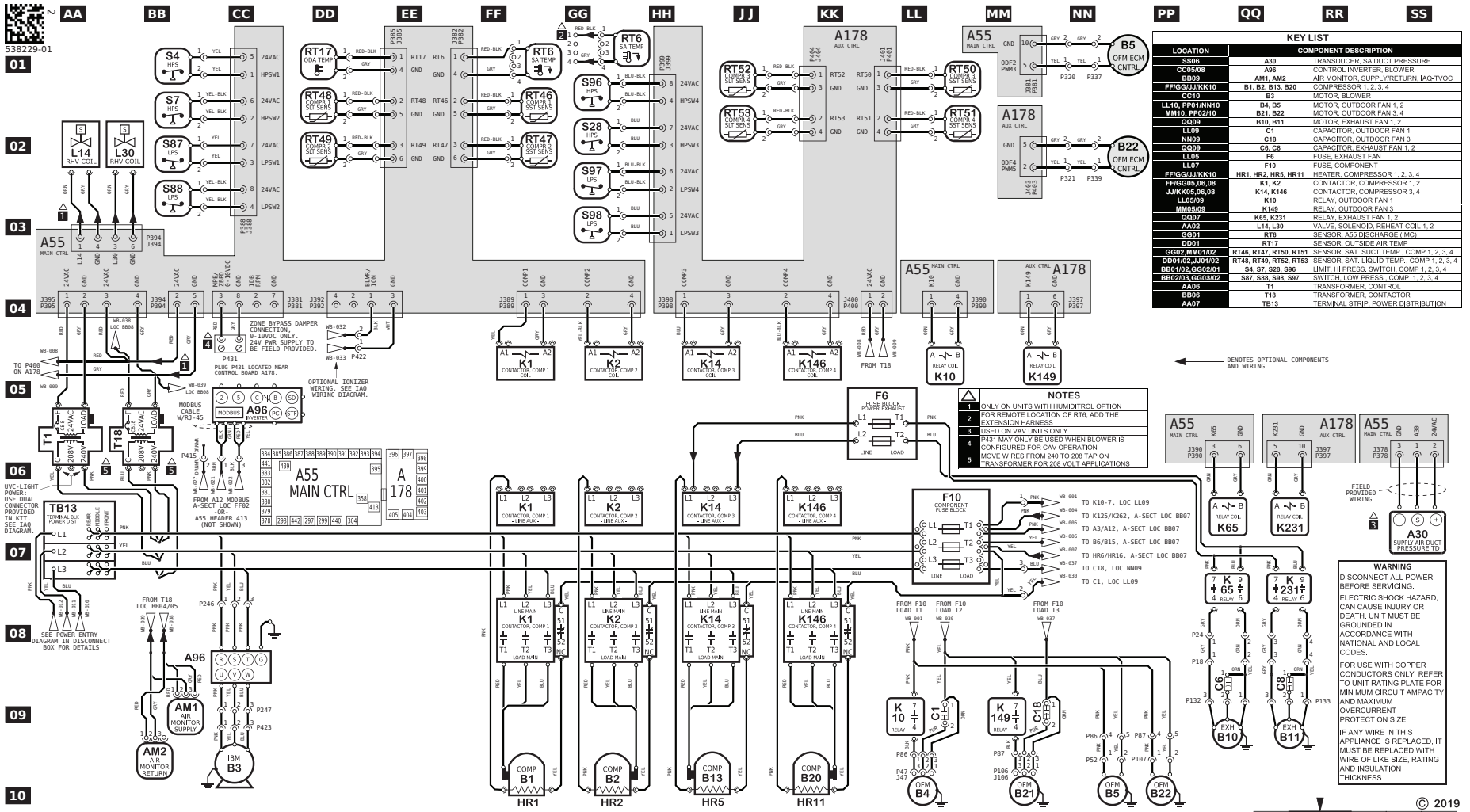
2 - K203-1 N.C. contacts open to de-energize K3 relay coil. K3 contacts open to interrupt power to B3 blower motor through K3 N.O. contacts.

3 - K202 contacts close to allow power to B3 blower motor from A96 blower inverter.

By-Pass Not Installed

1 - Control inverter A96 energizes B3.

LGT210 Y VOLT DIAGRAM - NO BYPASS



KEY LIST		
LOCATION	COMPONENT DESCRIPTION	
SS06	A30	TRANSDUCER, SA DUCT PRESSURE
CC05/08	A96	CONTROL INVERTER, BLOWER
BB09	AM1, AM2	AIR MONITOR, SUPPLY/RETURN, IAQ-TVOC
FF/GGJJ/KK10	B1, B2, B13, B20	COMPRESSOR 1, 2, 3, 4
CC10	B3	MOTOR, BLOWER
LL10, PP01/NN10	B4, B5	MOTOR, OUTDOOR FAN 1, 2
MM10, PP02/10	B21, B22	MOTOR, OUTDOOR FAN 3, 4
QQ09	B10, B11	MOTOR, EXHAUST FAN 1, 2
LL09	C1	CAPACITOR, OUTDOOR FAN 1
NN09	C18	CAPACITOR, OUTDOOR FAN 3
QQ09	C6, C8	CAPACITOR, EXHAUST FAN 1, 2
LL05	F6	FUSE, EXHAUST FAN
LL07	F10	FUSE, COMPONENT
FF/GGJJ/KK10	HR1, HR2, HR5, HR11	HEATER, COMPRESSOR 1, 2, 3, 4
FF/GG05,06,08	K1, K2	CONTACTOR, COMPRESSOR 1, 2
JJ/KK05,06,08	K14, K146	CONTACTOR, COMPRESSOR 3, 4
LL05/09	K10	RELAY, OUTDOOR FAN 1
MM05/09	K149	RELAY, OUTDOOR FAN 3
QQ07	K65, K231	RELAY, EXHAUST FAN 1, 2
AA02	L14, L30	VALVE, SOLENOID, REHEAT COIL 1, 2
GG01	RT6	SENSOR, A55 DISCHARGE (IMC)
DD01	RT17	SENSOR, OUTSIDE AIR TEMP
GG02, MM01/02	RT46, RT47, RT50, RT51	SENSOR, SAT, BUCT TEMP., COMP 1, 2, 3, 4
DD01/02, JJ01/02	RT48, RT49, RT52, RT53	SENSOR, SAT, LIQUID TEMP., COMP 1, 2, 3, 4
BB01/02,GG02/01	S4, S7, S28, S96	LIMIT, HI PRESS. SWITCH, COMP 1, 2, 3, 4
BB02/03,GG03/02	S87, S88, S98, S97	SWITCH, LOW PRESS., COMP. 1, 2, 3, 4
AA08	T1	TRANSFORMER, CONTROL
BB06	T18	TRANSFORMER, CONTACTOR
AA07	TB13	TERMINAL STRIP, POWER DISTRIBUTION

NOTES	
1	ONLY ON UNITS WITH HUMIDITROL OPTION
2	FOR REMOTE LOCATION OF RT6, ADD THE EXTENSION HARNESS
3	USED ON VAV UNITS ONLY
4	P431 MAY ONLY BE USED WHEN BLOWER IS CONFIGURED FOR CAV OPERATION
5	MOVE WIRES FROM 240 TO 208 TAP ON TRANSFORMER FOR 208 VOLT APPLICATIONS

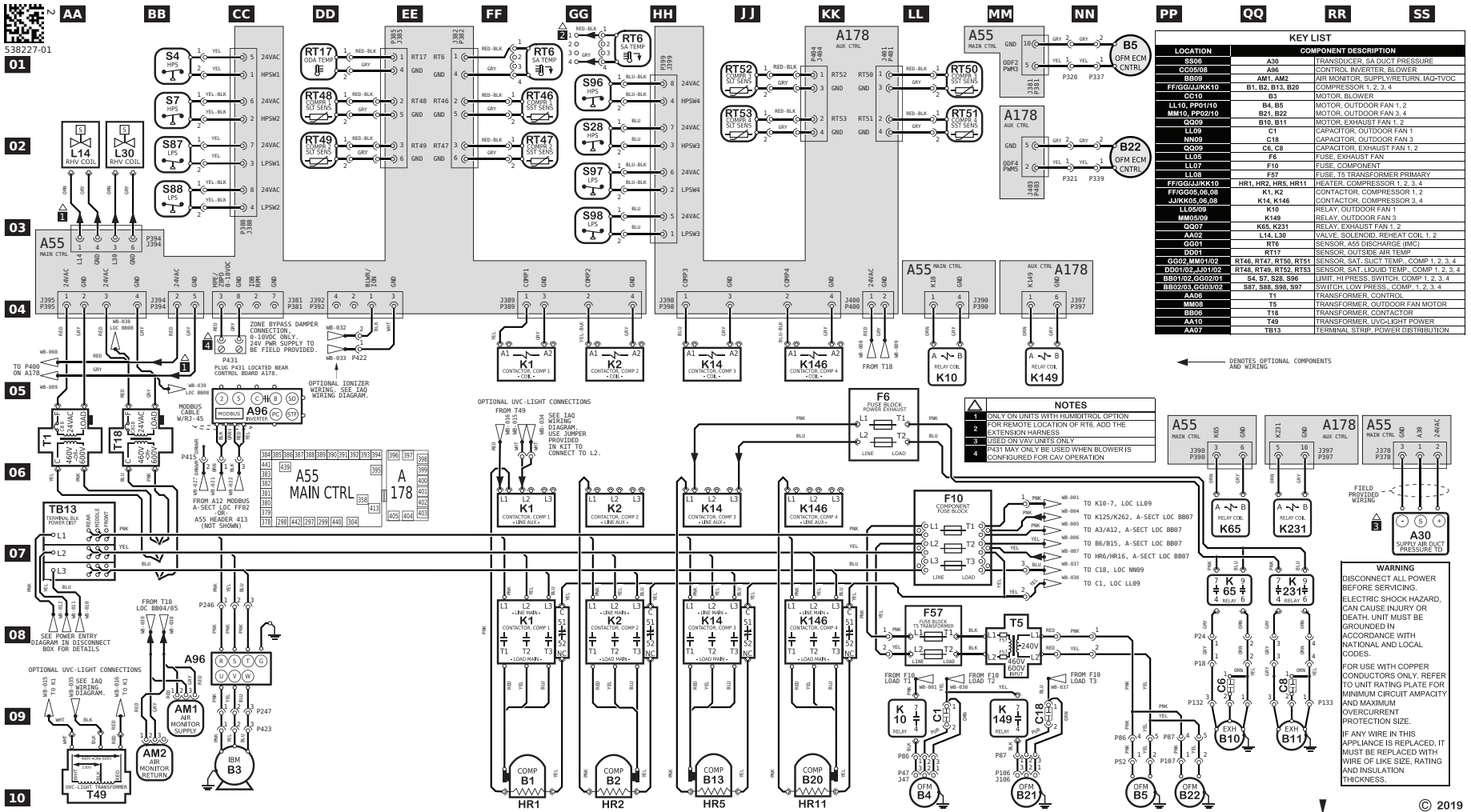
Model: LGT, LCT 210H - Y-VOLT
COOLING - MSAV NO BYPASS -OR- VAV - 4 COMPRESSORS 4 CONDENSER FANS

Voltage: 208-240V/3~/60Hz (Y)
Supersedes: N/A Form No: 538229-01 Rev: 2

10x17 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
- -	CN-010356	06-20-2022	MXR6	JAL21	ORIGINATED AT PD&R CARROLLTON, TX
001	CN-010356E	07-26-2022	MXR6	JAL21	A) REVERSED HIGH VOLTAGE WIRING ON T18 TRANSFORMER.
002	CN-012015A	04-11-2024	MXR6	JAL21	UPDATED GND SYMBOL ON MOTORS AND INVERTER

LGT210 G & J VOLT DIAGRAM - NO BYPASS



KEY LIST		
LOCATION	COMPONENT DESCRIPTION	
SS06	A30	TRANSDUCER, SA DUCT PRESSURE
CC05/08	A96	CONTROL INVERTER, BLOWER
BB09	AM1, AM2	AIR MONITOR, SUPPLY/RETURN, IAQ-TVOC
FF/GG/JJ/KK10	B1, B2, B13, B20	COMPRESSOR 1, 2, 3, 4
CC10	B3	MOTOR, BLOWER
LL10, PP01/10 MM10, PP02/10	B4, B5 B21, B22	MOTOR, OUTDOOR FAN 1, 2 MOTOR, OUTDOOR FAN 3, 4
QQ09	B10, B11	MOTOR, EXHAUST FAN 1, 2
LL09	C1	CAPACITOR, OUTDOOR FAN 1
NN09	C18	CAPACITOR, OUTDOOR FAN 3
QQ09	C6, C8	CAPACITOR, EXHAUST FAN 1, 2
LL05	F6	FUSE, EXHAUST FAN
LL07	F10	FUSE, COMPONENT
LL08	F57	FUSE, T5 TRANSFORMER PRIMARY
FF/GG/JJ/KK10	HR1, HR2, HR5, HR11	HEATER, COMPRESSOR 1, 2, 3, 4
FF/GG05,06,08 JJ/KK05,06,08	K1, K2 K14, K146	CONTACTOR, COMPRESSOR 1, 2 CONTACTOR, COMPRESSOR 3, 4
LL05/09 MM05/09	K10 K149	RELAY, OUTDOOR FAN 1 RELAY, OUTDOOR FAN 3
QQ07	K65, K231	RELAY, EXHAUST FAN 1, 2
AA02	L14, L30	VALVE, SOLENOID, REHEAT COIL 1, 2
GG01	RT6	SENSOR, A55 DISCHARGE (IMC)
DD01	RT17	SENSOR, OUTSIDE AIR TEMP
GG02,MM01/02	RT46, RT47, RT50, RT51	SENSOR, SAT, SUCT TEMP., COMP 1, 2, 3, 4
DD01/02,JJ01/02	RT48, RT49, RT52, RT53	SENSOR, SAT, LIQUID TEMP., COMP 1, 2, 3, 4
BB01/02,GG02/01	S4, S7, S28, S96	LIMIT, HI PRESS. SWITCH, COMP 1, 2, 3, 4
BB02/03,GG03/02	S87, S88, S98, S97	SWITCH, LOW PRESS., COMP. 1, 2, 3, 4
AA06	T1	TRANSFORMER, CONTROL
MM08	T5	TRANSFORMER, OUTDOOR FAN MOTOR
BB06	T18	TRANSFORMER, CONTACTOR
AA10	T49	TRANSFORMER, UVC-LIGHT POWER
AA07	TB13	TERMINAL STRIP, POWER DISTRIBUTION

NOTES	
1	ONLY ON UNITS WITH HUMIDITROL OPTION
2	FOR REMOTE LOCATION OF RT6, ADD THE EXTENSION HARNESS
3	USED ON VAV UNITS ONLY
4	P431 MAY ONLY BE USED WHEN BLOWER IS CONFIGURED FOR CAV OPERATION

WARNING

DISCONNECT ALL POWER BEFORE SERVICING.

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

FOR USE WITH COPPER CONDUCTORS ONLY. REFER TO UNIT RATING PLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM OVERCURRENT PROTECTION SIZE.

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

Model: LGT, LCT 210H - G, J-VOLT
COOLING - MSAV NO BYPASS -OR- VAV - 4 COMPRESSORS 4 CONDENSER FANS

Voltage: 460V/3~/60Hz (G), 575V/3~/60Hz (J)
Supersedes: N/A Form No: 538227-01 Rev: 2

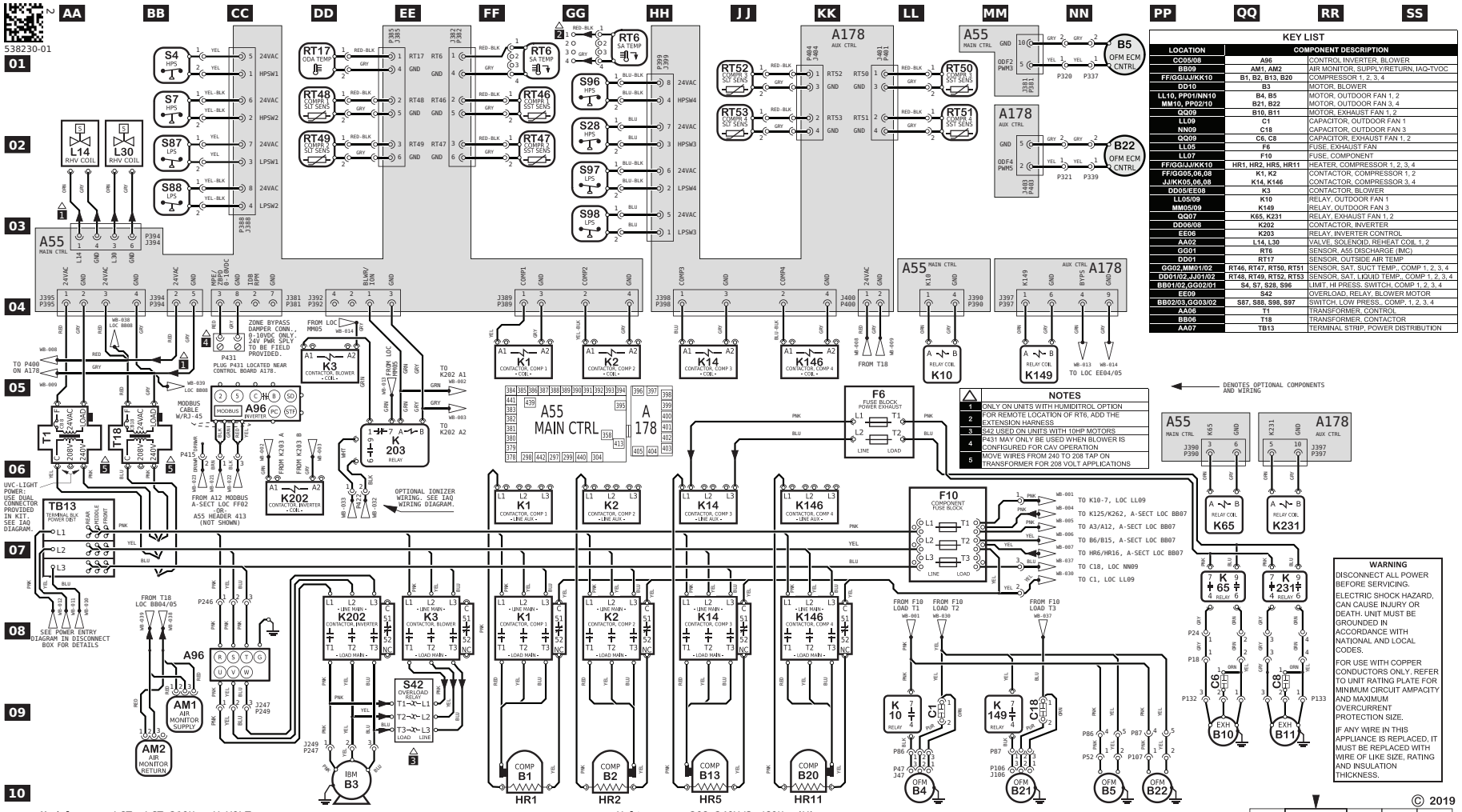
WIRING DIAGRAM FLOW

HEATING SECTION A	COOLING SECTION B	COOLING SECTION B3	ACCS SECTION C	ACCS SECTION D

10x17 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-010356	06-20-2022	MXR6	JAL21	ORIGINATED AT PD&R CARROLLTON, TX
001	CN-010356E	07-26-2022	MXR6	JAL21	A) REVERSED HIGH VOLTAGE WIRING ON T18 TRANSFORMER.
002	CN-012015A	04-11-2024	MXR6	JAL21	UPDATED GND SYMBOLS ON MOTORS AND INVERTER

LGT210 Y VOLT DIAGRAM - WITH BYPASS



KEY LIST	
LOCATION	COMPONENT DESCRIPTION
CC05/08	A96 — CONTROL INVERTER, BLOWER
BB09	AM1, AM2 — AIR MONITOR, SUPPLY/RETURN, IAQ-TVOC
FF/GG/JJ/KK10	B1, B2, B13, B20 — COMPRESSOR 1, 2, 3, 4
DD10	B3 — MOTOR, BLOWER
LL10, PP01/NN10 MM10, PP02/10	B4, B5 — MOTOR, OUTDOOR FAN 1, 2
QQ09	B21, B22 — MOTOR, OUTDOOR FAN 3, 4
LL09	B10, B11 — MOTOR, EXHAUST FAN 1, 2
NN09	C1 — CAPACITOR, OUTDOOR FAN 1
QQ09	C18 — CAPACITOR, OUTDOOR FAN 3
LL05	C6, C8 — CAPACITOR, EXHAUST FAN 1, 2
LL07	F6 — FUSE, EXHAUST FAN
FF/GG/JJ/KK10	F10 — FUSE, COMPONENT
FF/GG05,06,08 JJ/KK05,06,08	HR1, HR2, HR5, HR11 — HEATER, COMPRESSOR 1, 2, 3, 4
DD05/EE08	K1, K2 — CONTACTOR, COMPRESSOR 1, 2
LL05/09	K14, K146 — CONTACTOR, COMPRESSOR 3, 4
MM05/09	K3 — CONTACTOR, BLOWER
QQ07	K10 — RELAY, OUTDOOR FAN 1
DD06/08	K149 — RELAY, OUTDOOR FAN 3
EE06	K65, K231 — RELAY, EXHAUST FAN 1, 2
AA02	K202 — CONTACTOR, INVERTER
GG01	K203 — RELAY, INVERTER CONTROL
DD01	L14, L30 — VALVE, SOLENOID, REHEAT COIL 1, 2
GG02,MM01/02	RT6 — SENSOR, A55 DISCHARGE (IMC)
DD01/02, JJ01/02	RT17 — SENSOR, OUTSIDE AIR TEMP
BB01/02,GG02/01	RT46, RT47, RT50, RT51 — SENSOR, SAT, SUCT TEMP., COMP 1, 2, 3, 4
EE09	RT48, RT49, RT52, RT53 — SENSOR, SAT, LIQUID TEMP., COMP 1, 2, 3, 4
BB02/03,GG03/02	S4, S7, S28, S96 — LIMIT, HI PRESS. SWITCH, COMP 1, 2, 3, 4
AA06	S42 — OVERLOAD, RELAY, BLOWER MOTOR
BB06	S87, S88, S98, S97 — SWITCH, LOW PRESS., COMP. 1, 2, 3, 4
AA07	T1 — TRANSFORMER, CONTROL
	T18 — TRANSFORMER, CONTACTOR
	TB13 — TERMINAL STRIP, POWER DISTRIBUTION

NOTES	
1	ONLY ON UNITS WITH HUMIDITROL OPTION
2	FOR REMOTE LOCATION OF RT6, ADD THE EXTENSION HARNESS
3	B42 USED ON UNITS WITH 10HP MOTORS.
4	P431 MAY ONLY BE USED WHEN BLOWER IS CONFIGURED FOR CAV OPERATION
5	MOVE WIRES FROM 240 TO 208 TAP ON TRANSFORMER FOR 208 VOLT APPLICATIONS

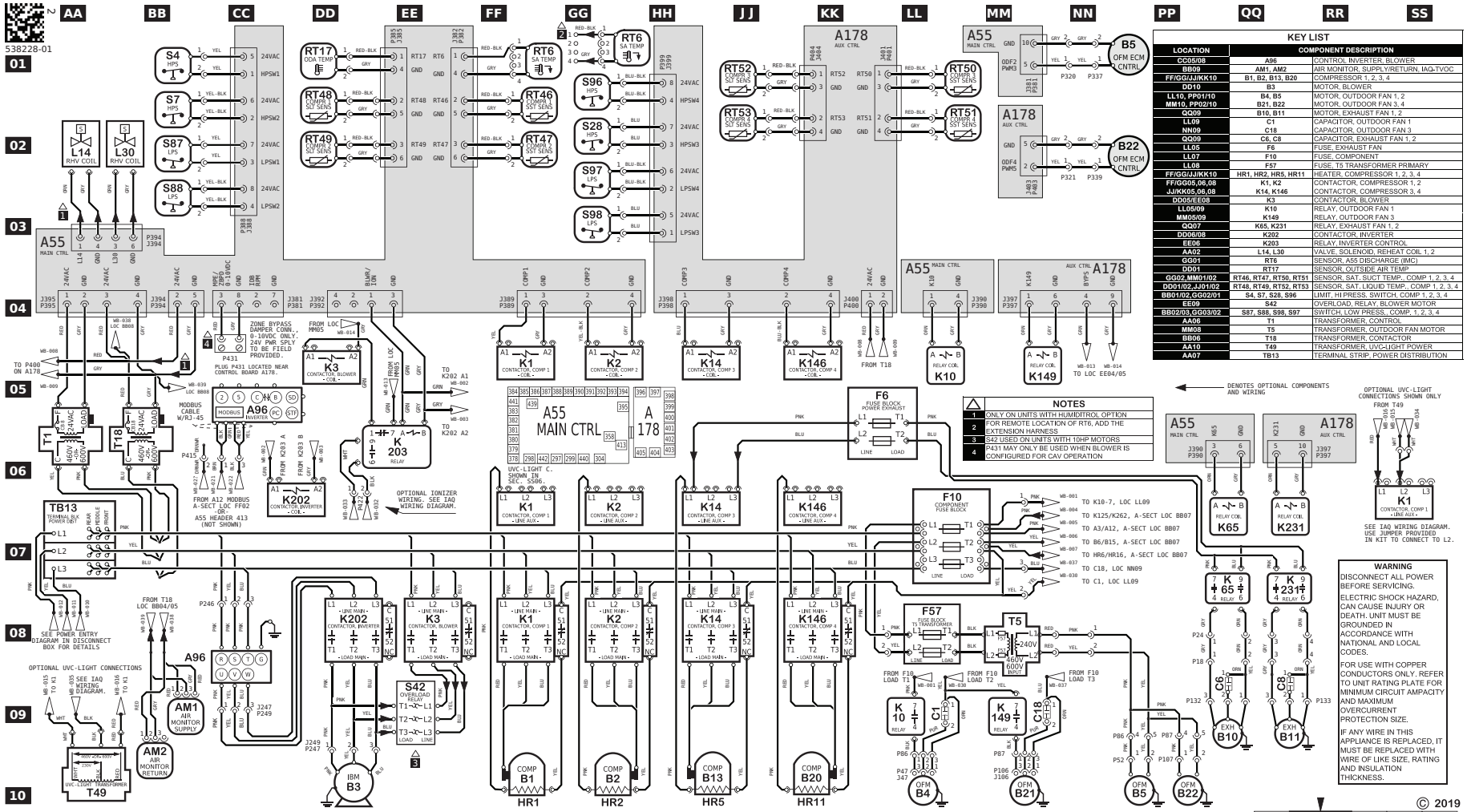
Model: LGT, LCT 210H - Y-VOLT
COOLING - MSAV WITH BYPASS - 4 COMPRESSORS 4 CONDENSER FANS

Voltage: 208-240V/3~/60Hz (Y)
Supersedes: N/A Form No: 538230-01 Rev: 2

10x17 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-010356	06-20-2022	MXR6	JAL21	ORIGINATED AT PD&R CARROLLTON, TX
001	CN-010356E	07-26-2022	MXR6	JAL21	A) REVERSED HIGH VOLTAGE WIRING ON T18 TRANSFORMER.
002	CN-012015A	04-11-2024	MXR6	JAL21	UPDATED GND SYMBOL ON MOTORS AND INVERTER

LGT210 G & J VOLT DIAGRAM - WITH BYPASS



KEY LIST		
LOCATION	COMPONENT DESCRIPTION	
CC05/08	A96	CONTROL INVERTER, BLOWER
BB09	AM1, AM2	AIR MONITOR, SUPPLY/RETURN, IAQ-TVOC
FF/GG/JJ/KK10	B1, B2, B13, B20	COMPRESSOR 1, 2, 3, 4
DD10	B3	MOTOR, BLOWER
LL10, PP01/10 MM10, PP02/10	B4, B5	MOTOR, OUTDOOR FAN 1, 2
QQ09	B21, B22	MOTOR, OUTDOOR FAN 3, 4
LL09	B10, B11	MOTOR, EXHAUST FAN 1, 2
NN09	C1	CAPACITOR, OUTDOOR FAN 1
QQ09	C18	CAPACITOR, OUTDOOR FAN 3
LL05	C6, C8	CAPACITOR, EXHAUST FAN 1, 2
LL07	F6	FUSE, EXHAUST FAN
LL08	F10	FUSE, COMPONENT
FF/GG/JJ/KK10	F57	FUSE, T5 TRANSFORMER PRIMARY
FF/GG05,06,08	HR1, HR2, HR5, HR11	HEATER, COMPRESSOR 1, 2, 3, 4
JJ/KK05,06,08	K1, K2	CONTACTOR, COMPRESSOR 1, 2
DD05/EE03	K14, K146	CONTACTOR, COMPRESSOR 3, 4
LL05/09	K3	CONTACTOR, BLOWER
MM05/09	K10	RELAY, OUTDOOR FAN 1
QQ07	K149	RELAY, OUTDOOR FAN 3
EE09	K65, K231	RELAY, EXHAUST FAN 1, 2
BB02/03,GG03/02	K202	CONTACTOR, INVERTER
AA06	K203	RELAY, INVERTER CONTROL
MM08	L14, L30	VALVE, SOLENOID, REHEAT COIL 1, 2
BB06	RT6	SENSOR, A55 DISCHARGE (IMC)
AA10	RT17	SENSOR, OUTSIDE AIR TEMP
AA07	RT46, RT47, RT50, RT51	SENSOR, SAT, SUCT TEMP., COMP 1, 2, 3, 4
	RT48, RT49, RT52, RT53	SENSOR, SAT, LIQUID TEMP., COMP 1, 2, 3, 4
	S4, S7, S28, S96	LIMIT, HI PRESS. SWITCH, COMP 1, 2, 3, 4
	S42	OVERLOAD, RELAY, BLOWER MOTOR
	S87, S88, S98, S97	SWITCH, LOW PRESS., COMP, 1, 2, 3, 4
	T1	TRANSFORMER, CONTROL
	T5	TRANSFORMER, OUTDOOR FAN MOTOR
	T18	TRANSFORMER, CONTACTOR
	T49	TRANSFORMER, UVC-LIGHT POWER
	TB13	TERMINAL STRIP, POWER DISTRIBUTION

NOTES	
1	ONLY ON UNITS WITH HUMIDITROL OPTION
2	FOR REMOTE LOCATION OF RT6, ADD THE EXTENSION HARNESS
3	S42 USED ON UNITS WITH 10HP MOTORS
4	P431 MAY ONLY BE USED WHEN BLOWER IS CONFIGURED FOR CAV OPERATION

WARNING

DISCONNECT ALL POWER BEFORE SERVICING.

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

FOR USE WITH COPPER CONDUCTORS ONLY. REFER TO UNIT RATING PLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM OVERCURRENT PROTECTION SIZE.

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

Model: LGT, LCT 210H - G, J-VOLT
COOLING - MSAV WITH BYPASS - 4 COMPRESSORS 4 CONDENSER FANS

Voltage: 460V/3~/60Hz (G), 575V/3~/60Hz (J)
Supersedes: N/A Form No: 538228-01 Rev: 2

WIRING DIAGRAM FLOW

HEATING SECTION A	COOLING SECTION B	COOLING SECTION B3	ACCS SECTION C	ACCS SECTION D

10x17 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-010356	06-20-2022	MXR6	JAL21	ORIGINATED AT PD&R CARROLLTON, TX
001	CN-010356E	07-26-2022	MXR6	JAL21	A) REVERSED HIGH VOLTAGE WIRING ON T18 TRANSFORMER.
002	CN-012015A	04-11-2024	MXR6	JAL21	UPDATED GND SYMBOL ON MOTORS AND INVERTER

Sequence of Operation LCT240, 300

1 - 1- Line voltage from TB13 energizes transformer T1 and T18. Transformer T1 and T18 provides 24VAC power to the main controller A55. The transformers also provide 24VAC power to the unit cooling, heating and blower controls and thermostat.

ECONOMIZER OPERATION

2 - The A55 Unit Controller receives a demand and energizes exhaust fan relay K65 and K231 with 24VAC at 50% (travel) outside air damper open (adjustable).

3 - N.O. K65-1, K65-2, K231-01 and K231-02 close, energizing exhaust fan motors B10 and B11.

1ST STAGE COOLING

4 - First stage cooling demand energizes Y1 and G in the thermostat.

5 - 24VAC is routed to the A55 Unit Controller. After A55 proves N.C. low pressure switches S87, S88 and N.C. high pressure switches S4 and S7, compressor contactors K1 and K2 are energized.

6 - A55 energizes fan B21 directly and fans B4 & B5 through K10.

7 - N.O. K1 closes energizing compressor B1, and N.C. K1-52 opens de-energizing HR1, N.O. K2 closes energizing compressor B2, and N.C. K2-52 opens de-energizing HR2.

2ND STAGE COOLING

8 - Second stage cooling demand energizes Y2.

9 - N.O. contacts K14-1 close energizing compressor B13, de-energizing HR5.

10 - A178 energizes fan B24 directly and fans B22 & B23 through K150.

11 - N.O. K14 closes energizing compressor B13, and N.C. K14-52 opens de-energizing HR5.

12 - \N.O. K146 closes energizing compressor B20, and N.C. K146-52 opens de-energizing HR11.

BLOWER OPERATION

With By Pass Installed - Active

1 - Main control A55 de-energizes relays K202 and K203

2 - K202 contacts open to interrupt power to B3 blower motor from A96 blower inverter.

3 - Main control A55 energizes relay K203-7.

4 - K203-1 N.C. contacts close allowing power to K3.

5 - K3 contacts close to allow power to B3 blower motor.

With By Pass Installed - Inactive

1 - Main control A55 energizes relays K202 and K203.

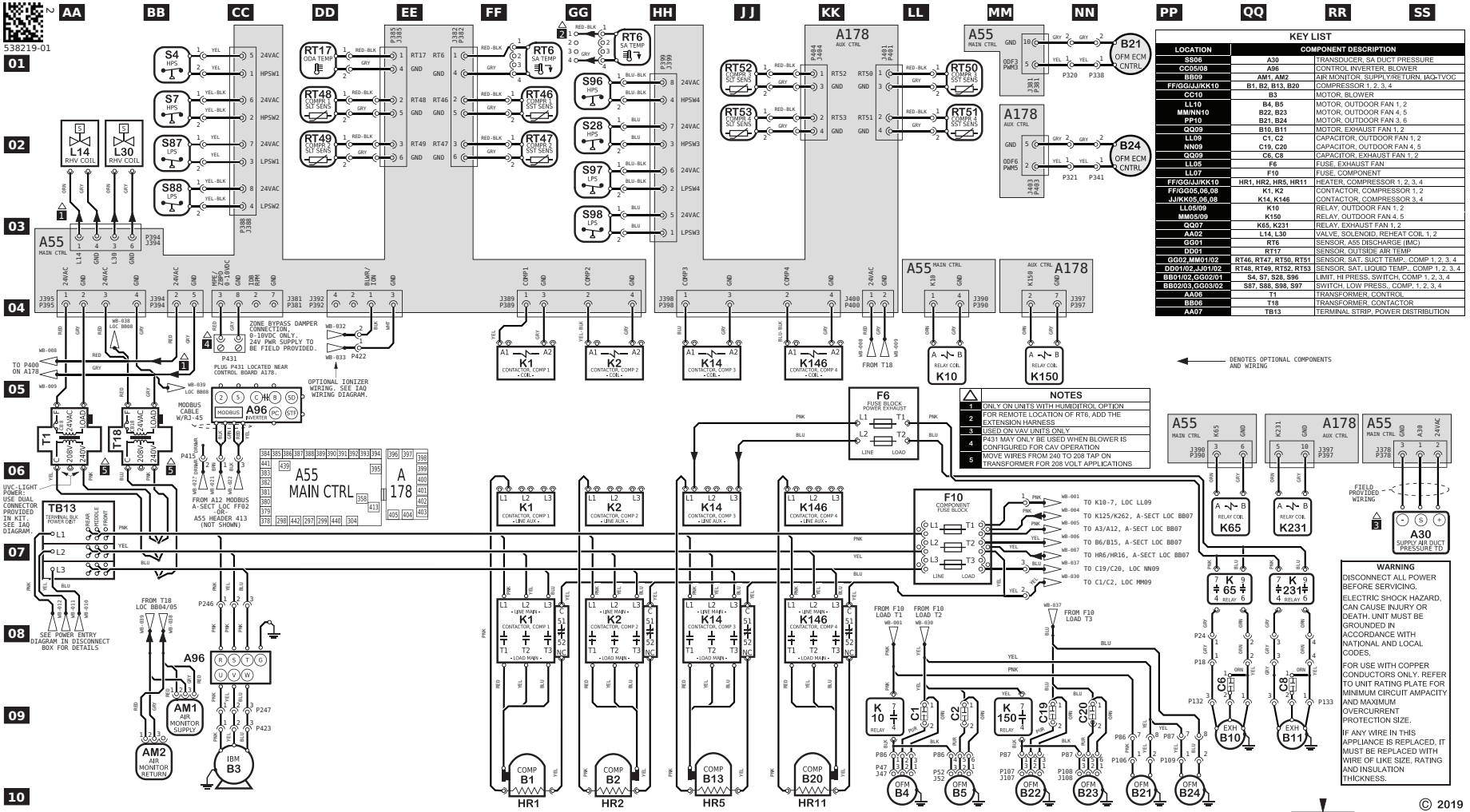
2 - K203-1 N.C. contacts open to de-energize K3 relay coil. K3 contacts open to interrupt power to B3 blower motor through K3 N.O. contacts.

3 - K202 contacts close to allow power to B3 blower motor from A96 blower inverter.

By-Pass Not Installed

1 - Control inverter A96 energizes B3.

LGT240-300 Y VOLT DIAGRAM - NO BYPASS



KEY LIST	
LOCATION	COMPONENT DESCRIPTION
SS06	A30 — TRANSDUCER, SA DUCT PRESSURE
CC05/08	A96 — CONTROL INVERTER, BLOWER
BB09	AM1, AM2 — AIR MONITOR, SUPPLY/RETURN, IAQ-TVOC
FF/GG/JJ/KK10	B1, B2, B13, B20 — COMPRESSOR 1, 2, 3, 4
CC10	B3 — MOTOR, BLOWER
LL10	B4, B5 — MOTOR, OUTDOOR FAN 1, 2
MM/NN10	B22, B23 — MOTOR, OUTDOOR FAN 4, 5
PP10	B21, B24 — MOTOR, OUTDOOR FAN 3, 6
QQ09	B10, B11 — MOTOR, EXHAUST FAN 1, 2
LL09	C1, C2 — CAPACITOR, OUTDOOR FAN 1, 2
NN09	C19, C20 — CAPACITOR, OUTDOOR FAN 4, 5
QQ09	C6, C8 — CAPACITOR, EXHAUST FAN 1, 2
LL05	F6 — FUSE, EXHAUST FAN
LL07	F10 — FUSE, COMPONENT
FF/GG/JJ/KK10	HR1, HR2, HR5, HR11 — HEATER, COMPRESSOR 1, 2, 3, 4
FF/GG05,06,08 JJ/KK05,06,08	K1, K2 — CONTACTOR, COMPRESSOR 1, 2 K14, K146 — CONTACTOR, COMPRESSOR 3, 4
LL05/09 MM05/09	K10 — RELAY, OUTDOOR FAN 1, 2 K150 — RELAY, OUTDOOR FAN 4, 5
QQ07	K65, K231 — RELAY, EXHAUST FAN 1, 2
AA02	L14, L30 — VALVE, SOLENOID, REHEAT COIL 1, 2
GG01	RT6 — SENSOR, A55 DISCHARGE (IMC)
DD01	RT17 — SENSOR, OUTSIDE AIR TEMP.
GG02,MM01/02	RT46, RT47, RT50, RT51 — SENSOR, SAT, SUCT TEMP., COMP 1, 2, 3, 4
DD01/02,JJ01/02	RT48, RT49, RT52, RT53 — SENSOR, SAT, LIQUID TEMP., COMP 1, 2, 3, 4
BB01/02,GG02/01	S4, S7, S28, S96 — LIMIT, HI PRESS, SWITCH, COMP 1, 2, 3, 4
BB02/03,GG03/02	S87, S88, S98, S97 — SWITCH, LOW PRESS., COMP 1, 2, 3, 4
AA08	T1 — TRANSFORMER, CONTROL
BB06	T18 — TRANSFORMER, CONTACTOR
AA07	TB13 — TERMINAL STRIP, POWER DISTRIBUTION

NOTES	
1	ONLY ON UNITS WITH HUMIDITROL OPTION
2	FOR REMOTE LOCATION OF RT6, ADD THE EXTENSION HARNESS
3	USED ON VAV UNITS ONLY
4	P431 MAY ONLY BE USED WHEN BLOWER IS CONFIGURED FOR CAV OPERATION
5	MOVE WIRES FROM 240 TO 208 TAP ON TRANSFORMER FOR 208 VOLT APPLICATIONS

WARNING

DISCONNECT ALL POWER BEFORE SERVICING.

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Model: LGT, LCT 240H, 300S - Y-VOLT
COOLING - MSAV NO BYPASS -OR- VAV - 4 COMPRESSORS, 6 CONDENSER FANS

Voltage: 208-240V/3~/60Hz (Y)
Supersedes: N/A Form No: 538219-01 Rev: 2

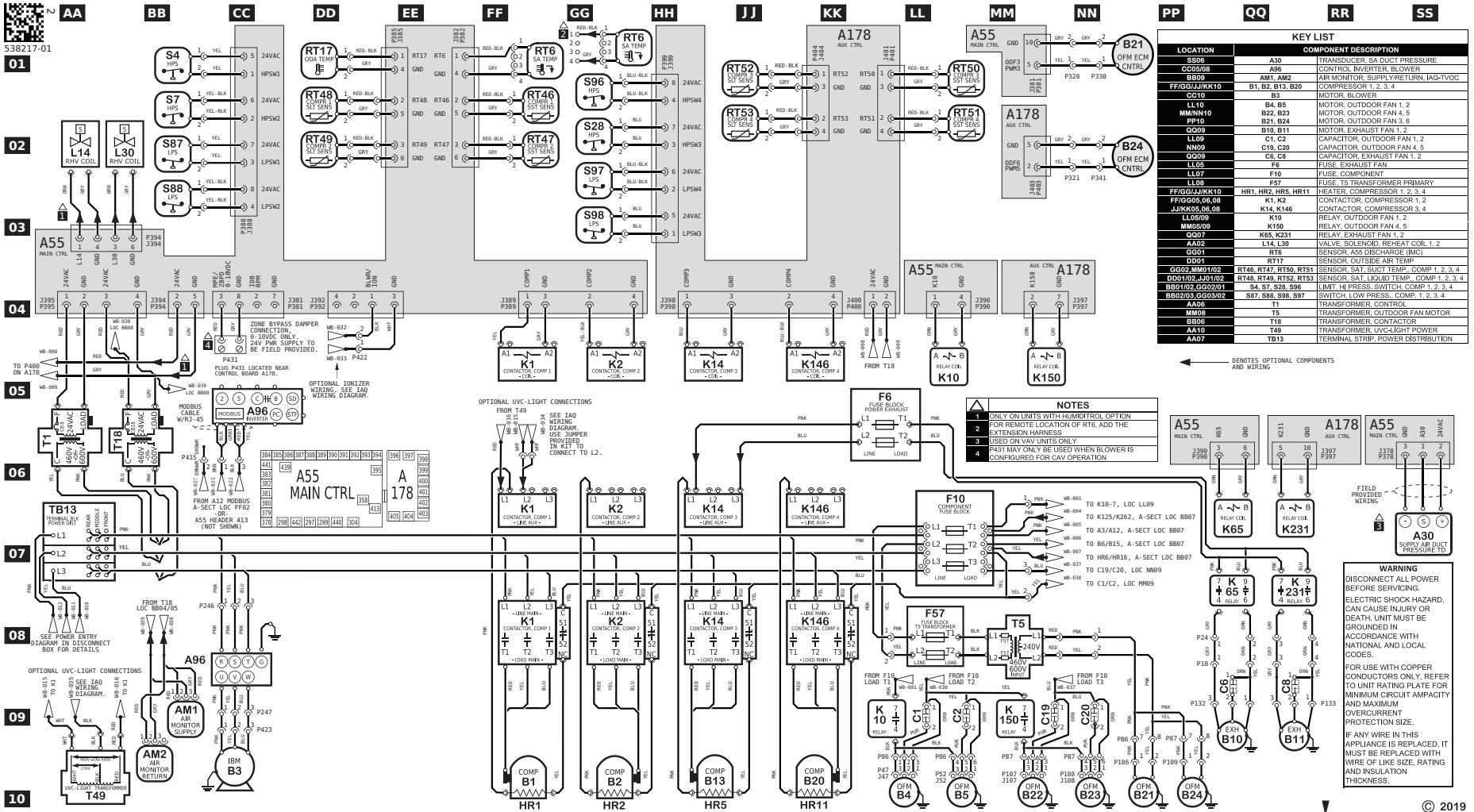
WIRING DIAGRAM FLOW

HEATING SECTION A	COOLING SECTION B	COOLING SECTION B3	ACCS SECTION C	ACCS SECTION D

10x17 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-010356	06-20-2022	MXR6	JAL21	ORIGINATED AT PD&R CARROLLTON, TX
001	CN-010356E	07-26-2022	MXR6	JAL21	A) REVERSED HIGH VOLTAGE WIRING ON T18 TRANSFORMER.
002	CN-012015A	04-11-2024	MXR6	JAL21	UPDATED GND SYMBOLS ON MOTORS AND INVERTER

LGT240-300 J VOLT DIAGRAM - NO BYPASS



KEY LIST		
LOCATION	**COMPONENT DESCRIPTION**	
SS08	**A30**	TRANSDUCER, SA DUCT PRESSURE
CC05/08	**A96**	CONTROL INVERTER, BLOWER
BB09	**AM1, AM2**	AIR MONITOR, SUPPLY/RETURN, IAQ-TVOC
FF/GG/JJ/KK10	**B1, B2, B13, B20**	COMPRESSOR 1, 2, 3, 4
CC10	**B3**	MOTOR, BLOWER
LL10 MM/NN10 PP10	**B4, B5 B22, B23 B21, B24**	MOTOR, OUTDOOR FAN 1, 2 MOTOR, OUTDOOR FAN 4, 5 MOTOR, OUTDOOR FAN 3, 6
QQ09	**B10, B11**	MOTOR, EXHAUST FAN 1, 2
LL09	**C1, C2**	CAPACITOR, OUTDOOR FAN 1, 2
NN09	**C19, C20**	CAPACITOR, OUTDOOR FAN 4, 5
QQ09	**C8, C8**	CAPACITOR, EXHAUST FAN 1, 2
LL05	**F6**	FUSE, EXHAUST FAN
LL07	**F10**	FUSE, COMPONENT
LL08	**F57**	FUSE, T5 TRANSFORMER PRIMARY
FF/GG/JJ/KK10	**HR1, HR2, HR5, HR11**	HEATER, COMPRESSOR 1, 2, 3, 4
FF/GG05,06,08 JJ/KK05,06,08	**K1, K2 K14, K146**	CONTACTOR, COMPRESSOR 1, 2 CONTACTOR, COMPRESSOR 3, 4
LL05/09 MM05/09	**K10 K150**	RELAY, OUTDOOR FAN 1, 2 RELAY, OUTDOOR FAN 4, 5
QQ07	**K65, K231**	RELAY, EXHAUST FAN 1, 2
AA02	**L14, L30**	VALVE, SOLENOID, REHEAT COIL 1, 2
GG01	**RT6**	SENSOR, A55 DISCHARGE (IMC)
DD01	**RT17**	SENSOR, OUTSIDE AIR TEMP
GG02,MM01/02	**RT46, RT47, RT50, RT51**	SENSOR, SAT, SUCT TEMP., COMP 1, 2, 3, 4
DD01/02,JJ01/02	**RT48, RT49, RT52, RT53**	SENSOR, SAT, LIQUID TEMP., COMP 1, 2, 3, 4
BB01/02,GG02/01	**S4, S7, S28, S96**	LIMIT, HI PRESS. SWITCH, COMP 1, 2, 3, 4
BB02/03,GG03/02	**S87, S88, S98, S97**	SWITCH, LOW PRESS., COMP. 1, 2, 3, 4
AA06	**T1**	TRANSFORMER, CONTROL
MM08	**T5**	TRANSFORMER, OUTDOOR FAN MOTOR
BB06	**T18**	TRANSFORMER, CONTACTOR
AA10	**T49**	TRANSFORMER, UVC-LIGHT POWER
AA07	**TB13**	TERMINAL STRIP, POWER DISTRIBUTION

NOTES	
1	ONLY ON UNITS WITH HUMIDITROL OPTION
2	FOR REMOTE LOCATION OF RT6, ADD THE EXTENSION HARNESS
3	USED ON VAV UNITS ONLY
4	P431 MAY ONLY BE USED WHEN BLOWER IS CONFIGURED FOR CAV OPERATION

WARNING

DISCONNECT ALL POWER BEFORE SERVICING.

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WIRING DIAGRAM FLOW

HEATING	COOLING	COOLING	ACCS	ACCS
SECTION A	SECTION B	SECTION B3	SECTION C	SECTION D

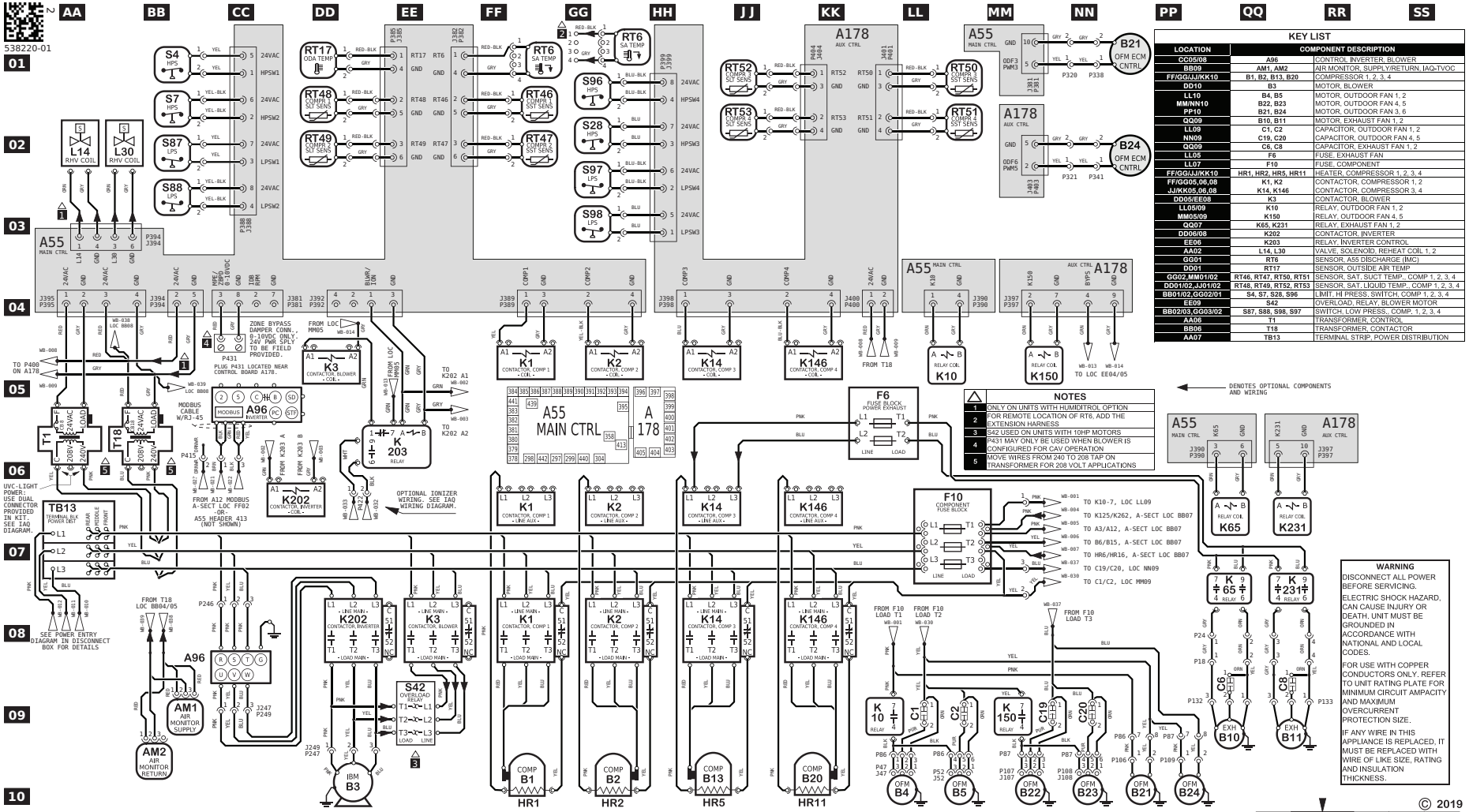
Model: LGT, LCT 240H, 300S - G, J-VOLT
COOLING - MSAV NO BYPASS -OR- VAV - 4 COMPRESSORS 6 CONDENSER FANS

Voltage: 460V/3~/60Hz (G), 575V/3~/60Hz (J)
Supersedes: N/A Form No: 538217-01 Rev: 2

10x17 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-010356	06-20-2022	MXR6	JAL21	ORIGINATED AT PD&R CARROLLTON, TX
001	CN-010356E	07-26-2022	MXR6	JAL21	A) REVERSED HIGH VOLTAGE WIRING ON T18 TRANSFORMER.
002	CN-012015A	04-11-2024	MXR6	JAL21	UPDATED GND SYMBOLS ON MOTORS AND INVERTER

LGT240-300 Y VOLT DIAGRAM - WITH BYPASS



KEY LIST	
LOCATION	COMPONENT DESCRIPTION
CC05/08	A96, CONTROL, INVERTER, BLOWER
BB09	AM1, AM2, AIR MONITOR, SUPPLY/RETURN, IAQ-TVOC
FF/GG/JJ/KK10	B1, B2, B13, B20, COMPRESSOR 1, 2, 3, 4
DD10	B3, MOTOR, BLOWER
LL10	B4, B5, MOTOR, OUTDOOR FAN 1, 2
MM/NN10	B22, B23, MOTOR, OUTDOOR FAN 4, 5
PP10	B21, B24, MOTOR, OUTDOOR FAN 3, 6
QQ09	B10, B11, MOTOR, EXHAUST FAN 1, 2
LL09	C1, C2, CAPACITOR, OUTDOOR FAN 1, 2
NN09	C19, C20, CAPACITOR, OUTDOOR FAN 4, 5
QQ09	C6, C8, CAPACITOR, EXHAUST FAN 1, 2
LL05	F6, FUSE, EXHAUST FAN
LL07	F10, FUSE, COMPONENT
FF/GG/JJ/KK10	HR1, HR2, HR5, HR11, HEATER, COMPRESSOR 1, 2, 3, 4
FF/GG05,06,08	K1, K2, CONTACTOR, COMPRESSOR 1, 2
JJ/KK05,06,08	K14, K146, CONTACTOR, COMPRESSOR 3, 4
DD05/EE08	K3, CONTACTOR, BLOWER
LL05/09	K10, RELAY, OUTDOOR FAN 1, 2
MM05/09	K150, RELAY, OUTDOOR FAN 4, 5
QQ07	K65, K231, RELAY, EXHAUST FAN 1, 2
DD08/08	K202, CONTACTOR, INVERTER
EE06	K203, RELAY, INVERTER CONTROL
AA02	L14, L30, VALVE, SOLENOID, REHEAT COIL 1, 2
GG01	RT6, SENSOR, A55 DISCHARGE (IMC)
DD01	RT17, SENSOR, OUTSIDE AIR TEMP
GG02,MM01/02	RT46, RT47, RT50, RT51, SENSOR, SAT, SUCT TEMP., COMP 1, 2, 3, 4
DD01/02,JJ01/02	RT48, RT49, RT52, RT53, SENSOR, SAT, LIQUID TEMP., COMP 1, 2, 3, 4
BB01/02,GG02/01	S4, S7, S28, S96, LIMIT, HI PRESS. SWITCH, COMP 1, 2, 3, 4
EE09	S42, OVERLOAD, RELAY, BLOWER MOTOR
BB02/03,GG03/02	S87, S88, S98, S97, SWITCH, LOW PRESS., COMP. 1, 2, 3, 4
AA06	T1, TRANSFORMER, CONTROL
BB06	T18, TRANSFORMER, CONTACTOR
AA07	TB13, TERMINAL STRIP, POWER DISTRIBUTION

NOTES	
1	ONLY ON UNITS WITH HUMIDITROL OPTION
2	FOR REMOTE LOCATION OF RT6, ADD THE EXTENSION HARNESS
3	S42 USED ON UNITS WITH 10HP MOTORS
4	P431 MAY ONLY BE USED WHEN BLOWER IS CONFIGURED FOR CAV OPERATION
5	MOVE WIRES FROM 240 TO 208 TAP ON TRANSFORMER FOR 208 VOLT APPLICATIONS

WARNING

DISCONNECT ALL POWER BEFORE SERVICING.

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Model: LGT, LCT 240H, 300S - Y-VOLT
COOLING - MSAV WITH BYPASS - 4 COMPRESSORS 6 CONDENSER FANS

Voltage: 208-240V/3~/60Hz (Y)
Supersedes: N/A Form No: 538220-01 Rev: 2

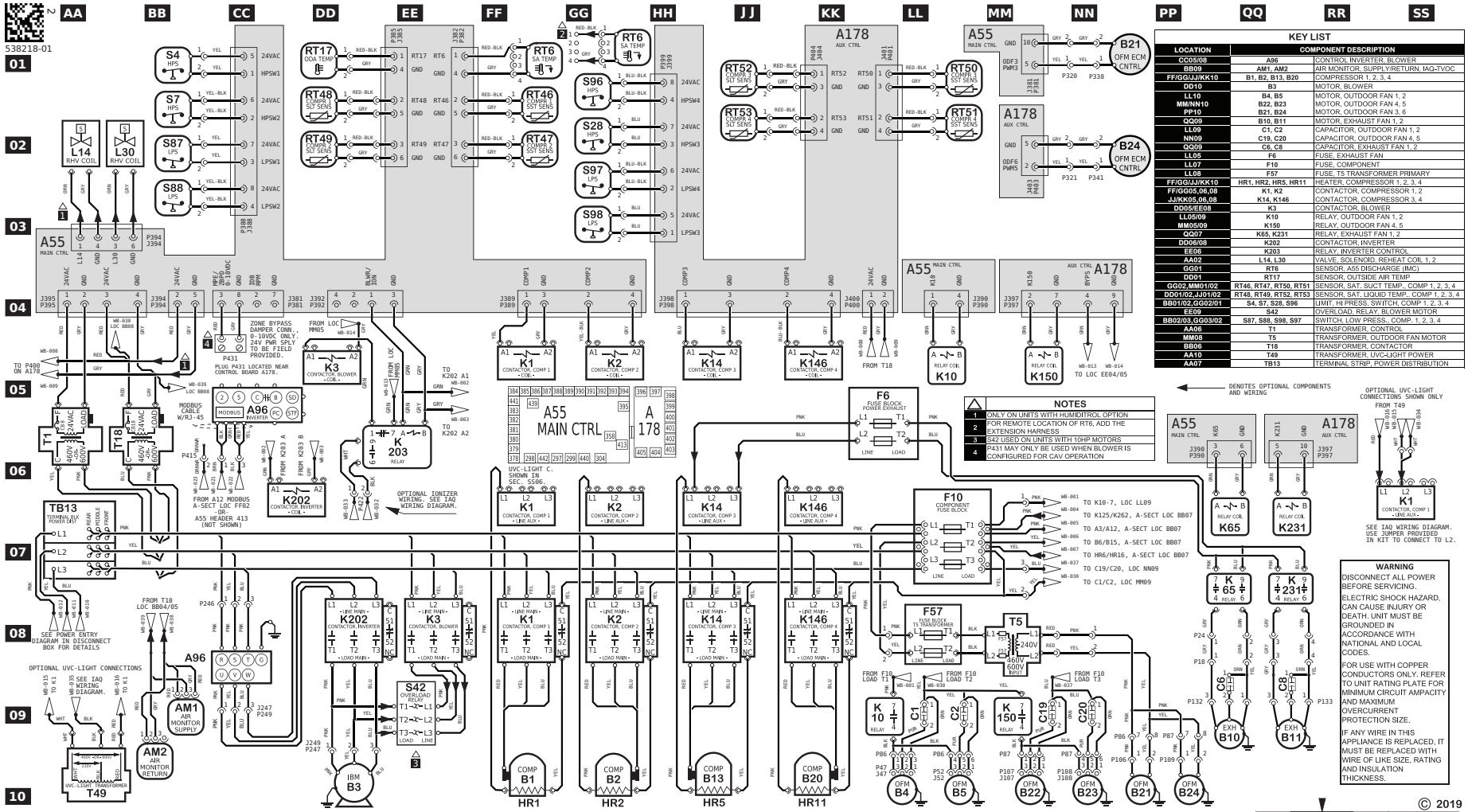
WIRING DIAGRAM FLOW

HEATING	COOLING	COOLING	ACCS	ACCS
SECTION A	SECTION B	SECTION B3	SECTION C	SECTION D

10x17 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-010356	06-20-2022	MXR6	JAL21	ORIGINATED AT PD&R CARROLLTON, TX
001	CN-010356E	07-26-2022	MXR6	JAL21	A) REVERSED HIGH VOLTAGE WIRING ON T18 TRANSFORMER.
002	CN-012015A	04-11-2024	MXR6	JAL21	UPDATED GND SYMBOLS ON MOTORS AND INVERTER

LGT240-300 G & J VOLT DIAGRAM - WITH BYPASS



NOTES	
1	ONLY ON UNITS WITH HUMIDITROL OPTION
2	FOR REMOTE LOCATION OF RT6, ADD THE EXTENSION HARNESS
3	S42 USED ON UNITS WITH 10HP MOTORS
4	P431 MAY ONLY BE USED WHEN BLOWER IS CONFIGURED FOR CAV OPERATION

KEY LIST

LOCATION	COMPONENT DESCRIPTION	
CC05/08	A96	CONTROL INVERTER, BLOWER
BB09	AM1, AM2	AIR MONITOR, SUPPLY/RETURN, IAQ-TVOC
FF/GG/JJ/KK10	B1, B2, B13, B20	COMPRESSOR 1, 2, 3, 4
DD10	B3	MOTOR, BLOWER
LL10	B4, B5	MOTOR, OUTDOOR FAN 1, 2
MM/NN10	B22, B23	MOTOR, OUTDOOR FAN 4, 5
PP10	B21, B24	MOTOR, OUTDOOR FAN 3, 6
QQ09	B10, B11	MOTOR, EXHAUST FAN 1, 2
LL09	C1, C2	CAPACITOR, OUTDOOR FAN 1, 2
NN09	C19, C20	CAPACITOR, OUTDOOR FAN 4, 5
QQ09	C6, C8	CAPACITOR, EXHAUST FAN 1, 2
LL05	F6	FUSE, EXHAUST FAN
LL07	F10	FUSE, COMPONENT
LL08	F57	FUSE, T5 TRANSFORMER PRIMARY
FF/GG/JJ/KK10	HR1, HR2, HR5, HR11	HEATER, COMPRESSOR 1, 2, 3, 4
FF/GG05,06,08	K1, K2	CONTACTOR, COMPRESSOR 1, 2
JJ/KK05,06,08	K14, K146	CONTACTOR, COMPRESSOR 3, 4
DD05/EE08	K3	CONTACTOR, BLOWER
LL09/09	K10	RELAY, OUTDOOR FAN 1, 2
MM09/09	K150	RELAY, OUTDOOR FAN 4, 5
QQ07	K65, K231	RELAY, EXHAUST FAN 1, 2
DD06/08	K202	CONTACTOR, INVERTER
EE06	K203	RELAY, INVERTER CONTROL
AA02	L14, L30	VALVE, SOLENOID, REHEAT COIL 1, 2
GG01	RT6	SENSOR, A55 DISCHARGE (IMC)
DD01	RT17	SENSOR, OUTSIDE AIR TEMP
GG02,MM01/02	RT46, RT47, RT50, RT51	SENSOR, SAT, SUCT TEMP., COMP 1, 2, 3, 4
DD01/02,JJ01/02	RT48, RT49, RT52, RT53	SENSOR, SAT, LIQUID TEMP., COMP 1, 2, 3, 4
BB01/02,GG02/01	S4, S7, S28, S96	LIMIT, HI PRESS, SWITCH, COMP 1, 2, 3, 4
EE06	S42	OVERLOAD, RELAY, BLOWER MOTOR
BB02/03,GG03/02	S87, S88, S98, S97	SWITCH, LOW PRESS., COMP. 1, 2, 3, 4
AA06	T1	TRANSFORMER, CONTROL
MM08	T5	TRANSFORMER, OUTDOOR FAN MOTOR
BB06	T18	TRANSFORMER, CONTACTOR
AA10	T49	TRANSFORMER, UVC-LIGHT POWER
AA07	TB13	TERMINAL STRIP, POWER DISTRIBUTION

WARNING

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Model: LGT, LCT 240H, 300S - G, J-VOLT
COOLING - MSAV WITH BYPASS - 4 COMPRESSORS 6 CONDENSER FANS

Voltage: 460V/3~/60Hz (G), 575V/3~/60Hz (J)
Supersedes: N/A Form No: 538218-01 Rev: 2

WIRING DIAGRAM FLOW

HEATING SECTION A	COOLING SECTION B	COOLING SECTION B3	ACCS SECTION C	ACCS SECTION D

10x17 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-010356	06-20-2022	MXR6	JAL21	ORIGINATED AT PD&R CARROLLTON, TX
001	CN-010356E	07-26-2022	MXR6	JAL21	A) REVERSED HIGH VOLTAGE WIRING ON T18 TRANSFORMER.
002	CN-012015A	04-11-2024	MXR6	JAL21	UPDATED GND SYMBOLS ON MOTORS AND INVERTER