# UNIT INFORMATION

100081
Revised 02/2024

**LGT SERIES**
**13 to 25 ton**
**45.7 to 88 kW**

***Service Literature***

## LGT156 through 300

The LGT156, 180, 210, 240 and 300 units are configure to order units (CTO) with a wide selection of factory installed options.

The LGT156 \ 300 is available in 169,000 to 480.000 Btuh. See SPECIFICATIONS-GAS HEAT for more detail per model.

Gas heat sections are designed with aluminized steel tube heat exchangers with stainless steel as an option.

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

Multi-Stage Air Volume MSAV® blower option is available. The VFD-driven blower will operate at lower speeds when demand is low and increase to higher speeds when demand is high.

Variable speed VAV system is available as an option which enables supply duct static measurement to control blower CFM and discharge air temperature to control cooling stages.

All LGT 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.

The CORE Control System is designed to accelerate equipment install and service. Standard with all Enlight rooftop units, control system integrates key technologies that lower installation costs, drive system efficiency, and protect your investments.

The CORE Unit Controller is a microprocessor-based controller that provides flexible control of all unit functions. 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.

If the unit must be lifted for service, rig unit by attaching four cables to the holes located in the unit base rail (two holes at each corner). Refer to the installation instructions for the proper rigging technique.

**⚠ 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**

**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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## OPTIONS / ACCESSORIES

| Item Description | | Catalog Number | Unit Model No 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 |
| **HEATING SYSTEM** | | | | | | | |
| Bottom Gas Piping Kit | | **85M31** | X | X | X | X | X |
| Combustion Air Intake Extensions (order two) | | **89L97** | X | X | X | X | X |
| Gas Heat Input | Low - 169,000 Btuh | Factory | O | O | O | | |
| | Standard - 260,000 Btuh | Factory | O | O | O | O | O |
| | Medium - 360,000 Btuh | Factory | O | O | O | O | O |
| | High - 480,000 Btuh | Factory | | O | O | O | O |
| Low Temperature Vestibule Heater | 208/230V-3ph | **22H58** | X | X | X | X | X |
| | 460V-3ph | **22H59** | X | X | X | X | X |
| | 575V-3ph | **22V43** | X | X | X | X | X |
| LPG/Propane Conversion Kits (Order 2 kits) | Low Heat | **14N28** | X | X | X | | |
| | Standard Heat | **14N28** | X | X | X | X | X |
| | Medium Heat | **14N29** | X | X | X | X | X |
| | High Heat | **14N30** | | X | X | X | X |
| Stainless Steel Heat Exchanger | | Factory | O | O | O | O | O |
| Vertical Vent Extension Kit (Order two kits) | | **42W16** | X | X | X | X | X |
| **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 1135-1365 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 |

NOTE - Catalog 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 | | Catalog Number | Unit Model No 156 | 180 | 210 | 240 | 300 |
|---|---|---|---|---|---|---|---|
| **CONTROLS** | | | | | | | |
| Blower Proving Switch | | **21Z10** | OX | OX | OX | OX | OX |
| Commercial Controls | CPC Einstein Integration | Factory | O | O | O | O | O |
| | 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 |
| **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 with LCD display, rated for plenum mounting | | **87N52** | X | X | X | X | X |
| Sensor - Wall-mount, black plastic case, no display, rated for plenum mounting | | **87N54** | X | X | X | X | X |
| $CO_2$ Sensor Duct Mounting Kit - for downflow applications | | **85L43** | 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 |
| [2] Disconnect Switch (see Disconnect Table for usage, page 54) | 80 amp | **54W88** | OX | OX | OX | OX | OX |
| | 150 amp | **54W89** | OX | OX | OX | OX | OX |
| | 250 amp | **90W82** | | | | | OX |
| GFI Service Outlets | 15 amp non-powered, field-wired (208/230V, 460V only) | **74M70** | OX | OX | OX | OX | OX |
| | [3] 15 amp factory-wired and powered (208/230V, 460V only) | Factory | O | O | O | O | O |
| | [4] 20 amp non-powered, field-wired (208/230V, 460V, 575V) | **67E01** | OX | OX | OX | OX | OX |
| | [4] 20 amp non-powered, field-wired (575V) | Factory | O | O | O | O | O |
| Weatherproof Cover for GFI | | **10C89** | X | X | X | X | X |
| Phase/Voltage Detection | | Factory | O | O | O | O | O |

[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] Disconnect Switch is furnished and factory installed with SCCR option.

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

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

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

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## OPTIONS / ACCESSORIES

| Item Description | | Catalog Number | Unit Model No 156 | 180 | 210 | 240 | 300 |
|---|---|---|---|---|---|---|---|
| **ECONOMIZER** | | | | | | | |
| **High Performance Economizer (Approved for California Title 24 Building Standards AMCA Class 1A Certified)** | | | | | | | |
| High Performance Economizer<br>Downflow or Horizontal Applications - Includes Outdoor Air Hood.<br>Order Downflow or Horizontal Barometric Relief Dampers 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 |
| **[1] 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 |
| Humidity Sensor Kit, Remote mounted | | **17M50** | X | X | X | X | X |

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

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

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## OPTIONS / ACCESSORIES

| Item Description | | Catalog Number | Unit Model No 156 | 180 | 210 | 240 | 300 |
|---|---|---|---|---|---|---|---|
| **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 |

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

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## SPECIFICATIONS — 13 TON

| General Data | | Nominal Tonnage | 13 Ton | 13 Ton |
|---|---|---|---|---|
| | | **Model Number** | **LGT156H4M** | **LGT156H4V** |
| | | **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 |
| | | Total Unit Power - kW | 12.3 | 12.3 |
| | | [1] IEER (Btuh/Watt) | 15.5 | 15.0 |
| | | [1] EER (Btuh/Watt) | 12.0 | 12.0 |
| **Refrigerant Charge** | | Refrigerant Type | R-410A | R-410A |
| | Without Reheat Option | Circuit 1 | 10 lbs. 7 oz. | 10 lbs. 7 oz. |
| | | Circuit 2 | 8 lbs. 15 oz. | 8 lbs. 15 oz. |
| | With Reheat Option | Circuit 1 | 10 lbs. 7 oz. | - - - |
| | | Circuit 2 | 8 lbs. 15 oz. | - - - |
| | | | | |
| **Compressor Type (number)** | | | (1) Two-Stage Scroll, (1) Single-Stage Scroll | |
| **Outdoor Coils** | | Net face area (total) - sq. ft. | 41.4 | 41.4 |
| | | Number of rows | 1 | 1 |
| | | Fins per inch | 23 | 23 |
| **Outdoor Coil Fans** | | Motor - horsepower | 1/3 | 1/3 |
| | | Motor Type | (1) ECM (2) PSC | (1) ECM (2) PSC |
| | | Motor rpm | 1075 | 1075 |
| | | Total Motor watts | 1100 | 1100 |
| | | Diameter - (No.) in. | (3) 24 | (3) 24 |
| | | Number of blades | 3 | 3 |
| | | Total Air volume - cfm | 12000 | 12000 |
| **Indoor Coils** | | Net face area (total) - sq. ft. | 21.40 | 21.40 |
| | | Tube diameter - in. | 3/8 | 3/8 |
| | | Number of rows | 3 | 3 |
| | | Fins per inch | 14 | 14 |
| | | Drain connection - No. and size | (1) 1in. FPT | (1) 1in. FPT |
| | | Expansion device type | Balanced Port Thermostatic Expansion Valve (removable element head) | |
| [2] **Indoor Blower and Drive Selection** | | Nominal motor output | 3 hp, 5 hp | |
| | | Max. usable motor output (US) | 3.45 hp, 5.75 hp | |
| | | Motor - Drive kit number | 3 hp<br>Kit 1 535-725 rpm<br>Kit 2 710-965 rpm<br>5 hp<br>Kit 3 685-856 rpm<br>Kit 4 850-1045 rpm<br>Kit 5 945-1185 rpm | |
| | | Blower wheel nominal D x W - in. | (2) 15 x 15 in. | |
| **Filters** | | Type of filter | MERV 4, Disposable | |
| | | Number and size - in. | (6) 24 x 24 x 2 | |
| **Electrical characteristics** | | | 208/230V, 460V or 575V - 60 hertz - 3 phase | |

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] 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

| | | | | |
|---|---|---|---|---|
| **General Data** | | **Nominal Tonnage** | **15 Ton** | **15 Ton** |
| | | **Model Number** | **LGT180H4M** | **LGT180H4V** |
| | | **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 | 5250 | 5250 |
| | | Total Unit Power - kW | 14.3 | 14.3 |
| | | [1] IEER (Btuh/Watt) | 15.0 | 15.0 |
| | | [1] EER (Btuh/Watt) | 12.0 | 12.0 |
| **Refrigerant Charge** | | Refrigerant Type | R-410A | R-410A |
| | Without Reheat Option | Circuit 1 | 6 lbs. 8 oz. | 6 lbs.8 oz. |
| | | Circuit 2 | 6 lbs. 5 oz. | 6 lbs. 5 oz. |
| | | Circuit 3 | 5 lbs. 8 oz. | 5 lbs. 8 oz. |
| | With Reheat Option | Circuit 1 | 6 lbs. 10 oz. | - - - |
| | | Circuit 2 | 6 lbs. 12 oz. | - - - |
| | | Circuit 3 | 5 lbs. 12 oz. | - - - |
| | | | | |
| **Compressor Type (number)** | | | Scroll (3) | Scroll (3) |
| **Outdoor Coils** | | Net face area (total) - sq. ft. | 55.2 | 55.2 |
| | | Number of rows | 1 | 1 |
| | | Fins per inch | 23 | 23 |
| **Outdoor Coil Fans** | | Motor - horsepower | 1/3 | 1/3 |
| | | Motor Type | (2) ECM (2) PSC | (2) ECM (2) PSC |
| | | Motor rpm | 1075 | 1075 |
| | | Total Motor watts | 1500 | 1500 |
| | | Diameter - (No.) in. | 24 (4) | 24 (4) |
| | | Number of blades | 3 | 3 |
| | | Total Air volume - cfm | 16000 | 16000 |
| **Indoor Coils** | | Net face area (total) - sq. ft. | 21.40 | 21.4 |
| | | Tube diameter - in. | 3/8 | 3/8 |
| | | Number of rows | 3 | 3 |
| | | Fins per inch | 14 | 14 |
| | | Drain connection - No. and size | (1) 1in. FPT | (1) 1in. FPT |
| | | Expansion device type | Balanced Port Thermostatic Expansion Valve (removable element head) | |
| [2] **Indoor Blower and Drive Selection** | | Nominal motor output | 3 hp, 5 hp, 7.5 hp | |
| | | Max. usable motor output (US) | 3.45 hp, 5.75 hp, 8.62 hp | |
| | | Motor - Drive kit number | 3 hp<br>Kit 1 535-725 rpm<br>Kit 2 710-965 rpm<br>5 hp<br>Kit 3 685-856 rpm<br>Kit 4 850-1045 rpm<br>Kit 5 945-1185 rpm<br>7.5 hp<br>Kit 6 850-1045 rpm<br>Kit 7 945-1185 rpm<br>Kit 8 1045-1285 rpm | |
| | | Blower wheel nominal D x W - in. | (2) 15 x 15 | |
| **Filters** | | Type of filter | MERV 4, Disposable | |
| | | Number and size - in. | (6) 24 x 24 x 2 | |
| **Electrical characteristics** | | | 208/230V, 460V or 575V - 60 hertz - 3 phase | |

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] 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

| General Data | | | 17.5 Ton | 17.5 Ton |
|---|---|---|---|---|
| | Nominal Tonnage | | 17.5 Ton | 17.5 Ton |
| | Model Number | | LGT210H4M | LGT210H4V |
| | 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 |
| | Total Unit Power - kW | | 16.6 | 16.6 |
| | [1] IEER (Btuh/Watt) | | 16.0 | 15.5 |
| | [1] EER (Btuh/Watt) | | 12.0 | 12.0 |
| **Refrigerant Charge** | Refrigerant Type | | R-410A | R-410A |
| | Without Reheat Option | Circuit 1 | 6 lbs. 9 oz. | 6 lbs. 9 oz. |
| | | Circuit 2 | 7 lbs. 3 oz. | 7 lbs. 3 oz. |
| | | Circuit 3 | 5 lbs. 11 oz. | 5 lbs. 11 oz. |
| | | Circuit 4 | 6 lbs. 2 oz. | 6 lbs. 2 oz. |
| | With Reheat Option | Circuit 1 | 7 lbs. 1 oz. | - - - |
| | | Circuit 2 | 8 lbs. 15 oz. | - - - |
| | | Circuit 3 | 5 lbs. 14 oz. | - - - |
| | | Circuit 4 | 6 lbs. 7 oz. | - - - |
| | | | | |
| **Compressor Type (number)** | | | Scroll (4) | Scroll (4) |
| **Outdoor Coils** | Net face area (total) - sq. ft. | | 55.2 | 55.2 |
| | Number of rows | | 1 | 1 |
| | Fins per inch | | 23 | 23 |
| **Outdoor Coil Fans** | Motor - horsepower | | 1/3 | 1/3 |
| | Motor Type | | (2) ECM (2) PSC | (2) ECM (2) PSC |
| | Motor rpm | | 1075 | 1075 |
| | Total Motor watts | | 1500 | 1500 |
| | Diameter - (No.) in. | | 24 (4) | (4) 24 |
| | Number of blades | | 3 | 3 |
| | Total Air volume - cfm | | 16000 | 16,000 |
| **Indoor Coils** | Net face area (total) - sq. ft. | | 21.40 | 21.40 |
| | Tube diameter - in. | | 3/8 | 3/8 |
| | Number of rows | | 4 | 4 |
| | Fins per inch | | 14 | 14 |
| | Drain connection - No. and size | | (1) 1in. FPT | (1) 1in. FPT |
| | Expansion device type | | Balanced Port Thermostatic Expansion Valve (removable element head) | |
| [2] **Indoor Blower and Drive Selection** | Nominal motor output | | 3 hp, 5 hp, 7.5 hp | |
| | Max. usable motor output (US) | | 3.45 hp, 5.75 hp, 8.62 hp | |
| | Motor - Drive kit number | | 3 hp<br>Kit 1 535-725 rpm<br>Kit 2 710-965 rpm<br>5 hp<br>Kit 3 685-856 rpm<br>Kit 4 850-1045 rpm<br>Kit 5 945-1185 rpm<br>7.5 hp<br>Kit 6 850-1045 rpm<br>Kit 7 945-1185 rpm<br>Kit 8 1045-1285 rpm | |
| | Blower wheel nominal D x W - in. | | (2) 15 x 15 | |
| **Filters** | Type of filter | | MERV 4, Disposable | |
| | Number and size - in. | | (6) 24 x 24 x 2 | |
| **Electrical characteristics** | | | 208/230V, 460V or 575V - 60 hertz - 3 phase | |

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] 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

| General Data | | Nominal Tonnage | 20 Ton | 20 Ton |
|---|---|---|---|---|
| | | **Model Number** | **LGT240H4M** | **LGT240H4V** |
| | | **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 | 6400 | 6400 |
| | | Total Unit Power - kW | 19.0 | 19.0 |
| | | [1] IEER (Btuh/Watt) | 15.7 | 15.2 |
| | | [1] EER (Btuh/Watt) | 12.0 | 12.0 |
| **Refrigerant Charge** | | Refrigerant Type | R-410A | R-410A |
| | Without Reheat Option | Circuit 1 | 6 lbs. 9 oz. | 6 lbs. 9 oz. |
| | | Circuit 2 | 6 lbs. 13 oz. | 6 lbs. 13 oz. |
| | | Circuit 3 | 5 lbs. 15 oz. | 5 lbs. 15 oz. |
| | | Circuit 4 | 6 lbs. 2 oz. | 6 lbs. 2 oz. |
| | With Reheat Option | Circuit 1 | 6 lbs. 8 oz. | - - - |
| | | Circuit 2 | 7 lbs. 15 oz. | - - - |
| | | Circuit 3 | 6 lbs. 2 oz. | - - - |
| | | Circuit 4 | 6 lbs. 11 oz. | - - - |
| | | | | |
| **Compressor Type (number)** | | | Scroll (4) | Scroll (4) |
| **Outdoor Coils** | | Net face area (total) - sq. ft. | 55.2 | 55.2 |
| | | Number of rows | 1 | 1 |
| | | Fins per inch | 23 | 23 |
| **Outdoor Coil Fans** | | Motor - horsepower | 1/3 | 1/3 |
| | | Motor Type | (2) ECM (4) PSC | (2) ECM (4) PSC |
| | | Motor rpm | 1075 | 1075 |
| | | Total Motor watts | 1075 - 1950 | 1075 - 1950 |
| | | Diameter - (No.) in. | (6) 24 | (6) 24 |
| | | Number of blades | 3 | 3 |
| | | Total Air volume - cfm | 20,000 | 20,000 |
| **Indoor Coils** | | Net face area (total) - sq. ft. | 21.40 | 21.40 |
| | | Tube diameter - in. | 3/8 | 3/8 |
| | | Number of rows | 4 | 4 |
| | | Fins per inch | 14 | 14 |
| | | Drain connection - No. and size | (1) 1in. FPT | (1) 1in. FPT |
| | | Expansion device type | Balanced Port Thermostatic Expansion Valve (removable element head) | |
| [2] **Indoor Blower and Drive Selection** | | Nominal motor output | 5 hp, 7.5 hp, 10 hp | |
| | | Max. usable motor output (US) | 5.75 hp, 8.62 hp, 11.5 hp | |
| | | Motor - Drive kit number | 5 hp<br>Kit 3 685-856 rpm<br>Kit 4 850-1045 rpm<br>Kit 5 945-1185 rpm<br>7.5 hp<br>Kit 6 850-1045 rpm<br>Kit 7 945-1185 rpm<br>Kit 8 1045-1285 rpm<br>10 hp<br>Kit 7 945-1185 rpm<br>Kit 10 1045-1285 rpm<br>Kit 11 1135-1365 rpm | |
| | | Blower wheel nominal D x W - in. | (2) 15 x 15 | |
| **Filters** | | Type of filter | MERV 4, Disposable | |
| | | Number and size - in. | (6) 24 x 24 x 2 | |
| **Electrical characteristics** | | | 208/230V, 460V or 575V - 60 hertz - 3 phase | |

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] 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

| General Data | | Nominal Tonnage | 25 Ton | 25 Ton |
|---|---|---|---|---|
| | | **Model Number** | **LGT300S4M** | **LGT300S4V** |
| | | **Efficiency Type** | **Standard** | **Standard** |
| | | **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 |
| | | Total Unit Power - kW | 26.2 | 26.5 |
| | | [1] IEER (Btuh/Watt) | 14.5 | 14.0 |
| | | [1] EER (Btuh/Watt) | 10.3 | 10.3 |
| **Refrigerant Charge** | | Refrigerant Type | R-410A | R-410A |
| | Without Reheat Option | Circuit 1 | 7 lbs. 13 oz. | 7 lbs. 13 oz. |
| | | Circuit 2 | 6 lbs. 8 oz. | 6 lbs. 8 oz. |
| | | Circuit 3 | 5 lbs. 12 oz. | 5 lbs. 12 oz. |
| | | Circuit 4 | 5 lbs. 12 oz. | 5 lbs. 12 oz. |
| | With Reheat Option | Circuit 1 | 7 lbs. 7 oz. | - - - |
| | | Circuit 2 | 7 lbs. 2 oz. | - - - |
| | | Circuit 3 | 5 lbs. 15 oz. | - - - |
| | | Circuit 4 | 6 lbs. 1 oz. | - - - |
| | | | | |
| **Compressor Type (number)** | | | Scroll (4) | Scroll (4) |
| **Outdoor Coils** | | Net face area (total) - sq. ft. | 55.2 | 55.2 |
| | | Number of rows | 1 | 1 |
| | | Fins per inch | 23 | 23 |
| **Outdoor Coil Fans** | | Motor - horsepower | 1/3 | 1/3 |
| | | Motor Type | (2) ECM (4) PSC | (2) ECM (4) PSC |
| | | Motor rpm | 1075 | 1075 |
| | | Total Motor watts | 1075 - 1950 | 1075 - 1950 |
| | | Diameter - (No.) in. | (6) 24 | (6) 24 |
| | | Number of blades | 3 | 3 |
| | | Total Air volume - cfm | 20000 | 20000 |
| **Indoor Coils** | | Net face area (total) - sq. ft. | 21.40 | 21.40 |
| | | Tube diameter - in. | 3/8 | 3/8 |
| | | Number of rows | 4 | 4 |
| | | Fins per inch | 14 | 14 |
| | | Drain connection - No. and size | (1) 1in. FPT | (1) 1in. FPT |
| | | Expansion device type | Balanced Port Thermostatic Expansion Valve (removable element head) | |
| [2] **Indoor Blower and Drive Selection** | | Nominal motor output | 5 hp, 7.5 hp, 10 hp | |
| | | Max. usable motor output (US) | 5.75 hp, 8.62 hp, 11.5 hp | |
| | | Motor - Drive kit number | 5 hp<br>Kit 3 685-856 rpm<br>Kit 4 850-1045 rpm<br>Kit 5 945-1185 rpm<br>7.5 hp<br>Kit 6 850-1045 rpm<br>Kit 7 945-1185 rpm<br>Kit 8 1045-1285 rpm<br>10 hp<br>Kit 7 945-1185 rpm<br>Kit 10 1045-1285 rpm<br>Kit 11 1135-1365 rpm | |
| | | Blower wheel nominal D x W - in. | (2) 15 x 15 | |
| **Filters** | | Type of filter | MERV 4, Disposable | |
| | | Number and size - in. | (6) 24 x 24 x 2 | |
| **Electrical characteristics** | | | 208/230V, 460V or 575V - 60 hertz - 3 phase | |

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] 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 — GAS HEAT

| Usage Data | Model Number | | LGT156 LGT180 LGT210 | LGT156 LGT180 LGT210 LGT240 LGT300 | | LGT180 LGT210 LGT240 LGT300 |
|---|---|---|---|---|---|---|
| | Heat Input Type | | Low (L) | Standard (S) | Medium (M) | High (H) |
| | Number of Gas Heat Stages | | One | [1] Two | [1] Two | [1] Two |
| [1] Gas Heating Performance | Input - Btuh | First Stage | 169,000 | 85,000 | 117,000 | 156,000 |
| | | Second Stage | - - - | 169,000 | 234,000 | 312,000 |
| | | Third Stage | - - - | 214,000 | 297,000 | 396,000 |
| | | Fourth Stage | - - - | 260,000 | 360,000 | 480,000 |
| | Output - Btuh | First Stage | 135,000 | - - - | - - - | - - - |
| | | Second Stage | - - - | - - - | - - - | - - - |
| | | Third Stage | - - - | - - - | - - - | - - - |
| | | Fourth Stage | - - - | 211,000 | 292,000 | 389,000 |
| Temperature Rise Range - °F | | First Stage | 15-45 | 15-45 | 30-60 | 40-70 |
| | | Second Stage | - - - | - - - | - - - | - - - |
| Minimum Air Volume - cfm | | | 4500 | 4500 | 4500 | 5125 |
| Thermal Efficiency | | | 80% | 81% | 81% | 81% |
| Gas Supply Connections | | | 1 in. NPT | 1 in. NPT | 1 in. NPT | 1 in. NPT |
| Recommended Gas Supply Pressure - in. w.g. | | Natural | 7 | 7 | 7 | 7 |
| | | LPG/Propane | 11 | 11 | 11 | 11 |
| Gas Supply Pressure Range | | Min./Max. (Natural) | 4.7 - 10.5 in. w.g. | | | |
| | | Min./Max. (LPG) | 10.8 - 13.5 in.w.g. | | | |

[1] Two-stage heat models can be operated with four stages of gas heating when controlled in either zone sensor, Discharge Air Control, or fresh air tempering mode on the Lennox® CORE unit controller (available when using the CS8500 thermostat or when connected to Building Automation Systems using BACnet, LonTalk, or S-Bus protocols).

## HIGH ALTITUDE DERATE

**NOTE** - Units may be installed at altitudes up to 2000 feet above sea level without any modification. At altitudes above 2000 feet, units must be derated to match gas manifold pressures shown in table below.

At altitudes above 4500 feet units must be derated 4% for each 1000 feet above sea level.

**NOTE** – This is the only permissible derate for these units.

Refer to the Installation Instructions for more detailed information.

**ONE STAGE HEAT**

**No Adjustment Required**

**TWO STAGE HEAT**

| Heat Input Type | Altitude Feet | Gas Manifold Pressure - in. w.g. | | Input Rate (Btuh) | |
|---|---|---|---|---|---|
| | | Natural Gas | LPG/Propane Gas | First Stage | Second Stage |
| Standard (2 stage) | 2001 - 4500 | 1.6 / 3.1 | 4.4 / 8.9 | 169,000 | 239,000 |
| Medium (2 stage) | 2001 - 4500 | 1.6 / 3.1 | 4.4 / 8.9 | 234,000 | 331,000 |
| High (2 stage) | 2001 - 4500 | 1.6 / 3.1 | 4.4 / 8.9 | 312,000 | 442,000 |

**FOUR STAGE HEAT**

| [1] Heat Input Type | Altitude Feet | Gas Manifold Pressure - in. w.g. | | Input Rate (Btuh) | | | |
|---|---|---|---|---|---|---|---|
| | | Natural Gas | LPG/Propane Gas | First Stage | Second Stage | Third Stage | Fourth Stage |
| Standard (4 stage) | 2001 - 4500 | 1.6 / 3.1 | 4.4 / 8.9 | 85,000 | 169,000 | 204,000 | 239,000 |
| Medium (4 stage) | 2001 - 4500 | 1.6 / 3.1 | 4.4 / 8.9 | 117,000 | 234,000 | 283,000 | 331,000 |
| High (4 stage) | 2001 - 4500 | 1.6 / 3.1 | 4.4 / 8.9 | 156,000 | 312,000 | 377,000 | 442,000 |

[1] Four-Stage Gas Heating is field configured.

## 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 (heat section, economizer, etc.)
3 - Any field installed accessories air resistance (heat section, duct resistance, diffuser, etc.)

Then determine from blower table blower motor output and drive required.
See page 13 for wet coil, option/accessory air resistance data, and factory installed drive kit specifications.

**Minimum Air Volume Required For Different Gas Heat Sizes:**

Low, Standard and Medium Heat - 4500 cfm minimum; High Heat - 5125 cfm

| 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 - 1365 |

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 | | Humiditrol® Reheat Coil | Gas Heat Exchanger | | | Economizer | Filters | | | Horizontal Roof Curb | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 156, 180 | 210, 240, 300 | | Low/ Standard Heat | Medium Heat | High Heat | | | | | 156 thru 240 | 300 |
| | in. w.g. | in. w.g. | 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 | .02 | .04 | .05 | - - - | .01 | .03 | .06 | .03 | - |
| 3000 | .01 | .02 | .01 | .03 | .04 | .05 | - - - | .01 | .03 | .06 | .04 | - |
| 3250 | .01 | .03 | .01 | .03 | .05 | .06 | - - - | .01 | .04 | .07 | .04 | .01 |
| 3500 | .01 | .03 | .02 | .03 | .05 | .06 | - - - | .01 | .04 | .08 | .05 | .01 |
| 3750 | .01 | .03 | .02 | .04 | .06 | .07 | - - - | .01 | .04 | .08 | .05 | .01 |
| 4000 | .02 | .04 | .02 | .04 | .06 | .07 | - - - | .01 | .04 | .09 | .06 | .02 |
| 4250 | .02 | .04 | .02 | .04 | .06 | .08 | - - - | .01 | .05 | .10 | .07 | .02 |
| 4500 | .02 | .05 | .02 | .05 | .07 | .09 | - - - | .01 | .05 | .10 | .07 | .02 |
| 4750 | .02 | .05 | .02 | .05 | .08 | .10 | - - - | .02 | .05 | .11 | .08 | .03 |
| 5000 | .02 | .05 | .02 | .05 | .09 | .11 | - - - | .02 | .06 | .12 | .08 | .03 |
| 5250 | .02 | .06 | .03 | .06 | .10 | .12 | - - - | .02 | .06 | .12 | .09 | .04 |
| 5500 | .02 | .07 | .03 | .06 | .10 | .13 | - - - | .02 | .06 | .13 | .10 | .04 |
| 5750 | .03 | .07 | .03 | .06 | .11 | .14 | - - - | .02 | .07 | .14 | .11 | .05 |
| 6000 | .03 | .08 | .03 | .07 | .12 | .15 | - - - | .03 | .07 | .14 | .11 | .06 |
| 6250 | .03 | .08 | .03 | .07 | .12 | .16 | .01 | .03 | .07 | .15 | .12 | .07 |
| 6500 | .03 | .09 | .04 | .08 | .13 | .17 | .02 | .03 | .08 | .16 | .13 | .08 |
| 6750 | .04 | .10 | .04 | .08 | .14 | .18 | .03 | .03 | .08 | .17 | .14 | .08 |
| 7000 | .04 | .10 | .04 | .09 | .15 | .19 | .04 | .04 | .08 | .17 | .15 | .09 |
| 7250 | .04 | .11 | .04 | .09 | .16 | .20 | .05 | .04 | .09 | .18 | .16 | .10 |
| 7500 | .05 | .12 | .05 | .10 | .17 | .21 | .06 | .04 | .09 | .19 | .17 | .11 |
| 8000 | .05 | .13 | .05 | .11 | .19 | .24 | .09 | .05 | .10 | .21 | .19 | .13 |
| 8500 | .06 | .15 | .05 | .12 | .20 | .26 | .11 | .05 | .10 | .22 | .21 | .15 |
| 9000 | .07 | .16 | .06 | .13 | .23 | .29 | .14 | .06 | .11 | .24 | .24 | .17 |
| 9500 | .08 | .18 | .07 | .14 | .25 | .32 | .16 | .07 | .12 | .25 | .26 | .19 |
| 10,000 | .08 | .20 | .07 | .16 | .27 | .35 | .19 | .07 | .12 | .27 | .29 | .21 |
| 10,500 | .09 | .22 | .08 | .17 | .30 | .38 | .22 | .08 | .13 | .29 | .31 | .24 |
| 11,000 | .11 | .24 | .08 | .18 | .31 | .40 | .25 | .09 | .14 | .30 | .34 | .27 |

## BLOWER DATA

**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.**

| Model No. | Air Volume cfm | [1] Effective Throw Range - ft. | |
|---|---|---|---|
| | | RTD11-185S Step-Down | FD11-185S Flush |
| 156<br>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 |

| Model No. | Air Volume cfm | [1] Effective Throw Range - ft. | |
|---|---|---|---|
| | | RTD11-275S Step-Down | FD11-275S Flush |
| 210<br>240<br>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 DATA — 13 TON

| | Model No. | LGT156H4 | | | | | |
|---|---|---|---|---|---|---|---|
| [1] Voltage - 60Hz | | 208/230V - 3 Ph | | 460V - 3 Ph | | 575V - 3 Ph | |
| Compressor 1 (Non-Inverter) | Rated Load Amps | 17.6 | | 8.5 | | 6.3 | |
| | Locked Rotor Amps | 136 | | 66.1 | | 55.3 | |
| Compressor 2 (Non-Inverter) | Rated Load Amps | 22.4 | | 10.6 | | 7.7 | |
| | Locked Rotor Amps | 149 | | 75 | | 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 | Horsepower | 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 | 40 | 40 | 30 | 30 |
| | With (2) 0.33 HP Power Exhaust | 90 | 90 | 40 | 45 | 30 | 35 |
| [3] Minimum Circuit Ampacity (MCA) | Unit Only | 66 | 72 | 32 | 35 | 24 | 26 |
| | With (2) 0.33 HP Power Exhaust | 70 | 76 | 34 | 37 | 26 | 28 |

## ELECTRICAL DATA — 15 TON

| | Model No. | LGT180H4 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| [1] Voltage - 60Hz | | 208/230V - 3 Ph | | | 460V - 3 Ph | | | 575V - 3 Ph | | |
| Compressor 1 (Non-Inverter) | Rated Load Amps | 13.2 | | | 6.3 | | | 4.9 | | |
| | Locked Rotor Amps | 93 | | | 60 | | | 41 | | |
| Compressor 2 (Non-Inverter) | Rated Load Amps | 13.2 | | | 6.3 | | | 4.9 | | |
| | Locked Rotor Amps | 93 | | | 60 | | | 41 | | |
| Compressor 3 (Non-Inverter) | Rated Load Amps | 13.2 | | | 6.3 | | | 4.9 | | |
| | 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 | Horsepower | 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 | 90 | 100 | 35 | 40 | 50 | 30 | 30 | 40 |
| | With (2) 0.33 HP Power Exhaust | 80 | 90 | 110 | 40 | 45 | 50 | 30 | 35 | 40 |
| [3] Minimum Circuit Ampacity (MCA) | Unit Only | 67 | 74 | 83 | 33 | 36 | 40 | 26 | 28 | 32 |
| | With (2) 0.33 HP Power Exhaust | 72 | 79 | 88 | 35 | 38 | 43 | 28 | 30 | 34 |

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 DATA — 17.5 TON

| Model No. | | LGT210H4 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| [1] Voltage - 60Hz | | 208/230V - 3 Ph | | | 460V - 3 Ph | | | 575V - 3 Ph | | |
| Compressor 1 (Non-Inverter) | Rated Load Amps | 14.5 | | | 6.3 | | | 6 | | |
| | Locked Rotor Amps | 98 | | | 55 | | | 41 | | |
| Compressor 2 (Non-Inverter) | Rated Load Amps | 14.5 | | | 6.3 | | | 6 | | |
| | Locked Rotor Amps | 98 | | | 55 | | | 41 | | |
| Compressor 3 (Non-Inverter) | Rated Load Amps | 14.5 | | | 6.3 | | | 6 | | |
| | Locked Rotor Amps | 98 | | | 55 | | | 41 | | |
| Compressor 4 (Non-Inverter) | Full Load Amps | 14.5 | | | 6.3 | | | 6 | | |
| | Total | 98 | | | 55 | | | 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 | Horsepower | 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 | 125 | 40 | 45 | 50 | 40 | 40 | 45 |
| | With (2) 0.33 HP Power Exhaust | 100 | 110 | 125 | 45 | 50 | 50 | 40 | 40 | 50 |
| [3] Minimum Circuit Ampacity (MCA) | Unit Only | 86 | 92 | 102 | 39 | 42 | 46 | 35 | 37 | 41 |
| | With (2) 0.33 HP Power Exhaust | 91 | 97 | 107 | 41 | 45 | 49 | 37 | 39 | 43 |

## ELECTRICAL DATA — 20 TON

| Model No. | | LGT240H4 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| [1] Voltage - 60Hz | | 208/230V - 3 Ph | | | 460V - 3 Ph | | | 575V - 3 Ph | | |
| Compressor 1 (Non-Inverter) | Rated Load Amps | 13.2 | | | 6.3 | | | 4.9 | | |
| | Locked Rotor Amps | 93 | | | 60 | | | 41 | | |
| Compressor 2 (Non-Inverter) | Rated Load Amps | 13.2 | | | 6.3 | | | 4.9 | | |
| | Locked Rotor Amps | 93 | | | 60 | | | 41 | | |
| Compressor 3 (Non-Inverter) | Rated Load Amps | 13.2 | | | 6.3 | | | 4.9 | | |
| | Locked Rotor Amps | 93 | | | 60 | | | 41 | | |
| Compressor 4 (Non-Inverter) | Rated Load Amps | 13.2 | | | 6.3 | | | 4.9 | | |
| | 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 | Horsepower | 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 | 125 | 125 | 50 | 50 | 60 | 40 | 45 | 50 |
| | With (2) 0.33 HP Power Exhaust | 110 | 125 | 125 | 50 | 60 | 60 | 40 | 45 | 50 |
| [3] Minimum Circuit Ampacity (MCA) | Unit Only | 92 | 101 | 110 | 45 | 49 | 53 | 35 | 39 | 41 |
| | With (2) 0.33 HP Power Exhaust | 97 | 106 | 114 | 47 | 51 | 55 | 37 | 41 | 43 |

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 DATA — 25 TON

| | Model No. | LGT300S4 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| [1] Voltage - 60Hz | | 208/230V - 3 Ph | | | 460V - 3 Ph | | | 575V - 3 Ph | | |
| Compressor 1 (Non-Inverter) | Rated Load Amps | 19.6 | | | 8.2 | | | 6.6 | | |
| | Locked Rotor Amps | 136 | | | 66.1 | | | 55.3 | | |
| Compressor 2 (Non-Inverter) | Rated Load Amps | 19.6 | | | 8.2 | | | 6.6 | | |
| | Locked Rotor Amps | 136 | | | 66.1 | | | 55.3 | | |
| Compressor 3 (Non-Inverter) | Rated Load Amps | 22.4 | | | 10.6 | | | 7.7 | | |
| | Locked Rotor Amps | 149 | | | 75 | | | 54 | | |
| Compressor 4 | Rated Load Amps | 22.4 | | | 10.6 | | | 7.7 | | |
| | Locked Rotor Amps | 149 | | | 75 | | | 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 | Horsepower | 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 | 70 | 70 | 50 | 50 | 60 |
| | With (2) 0.33 HP Power Exhaust | 150 | 150 | 175 | 70 | 70 | 80 | 50 | 50 | 60 |
| [3] Minimum Circuit Ampacity (MCA) | Unit Only | 125 | 133 | 141 | 58 | 61 | 65 | 44 | 48 | 50 |
| | With (2) 0.33 HP Power Exhaust | 129 | 137 | 146 | 60 | 64 | 68 | 46 | 50 | 52 |

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.

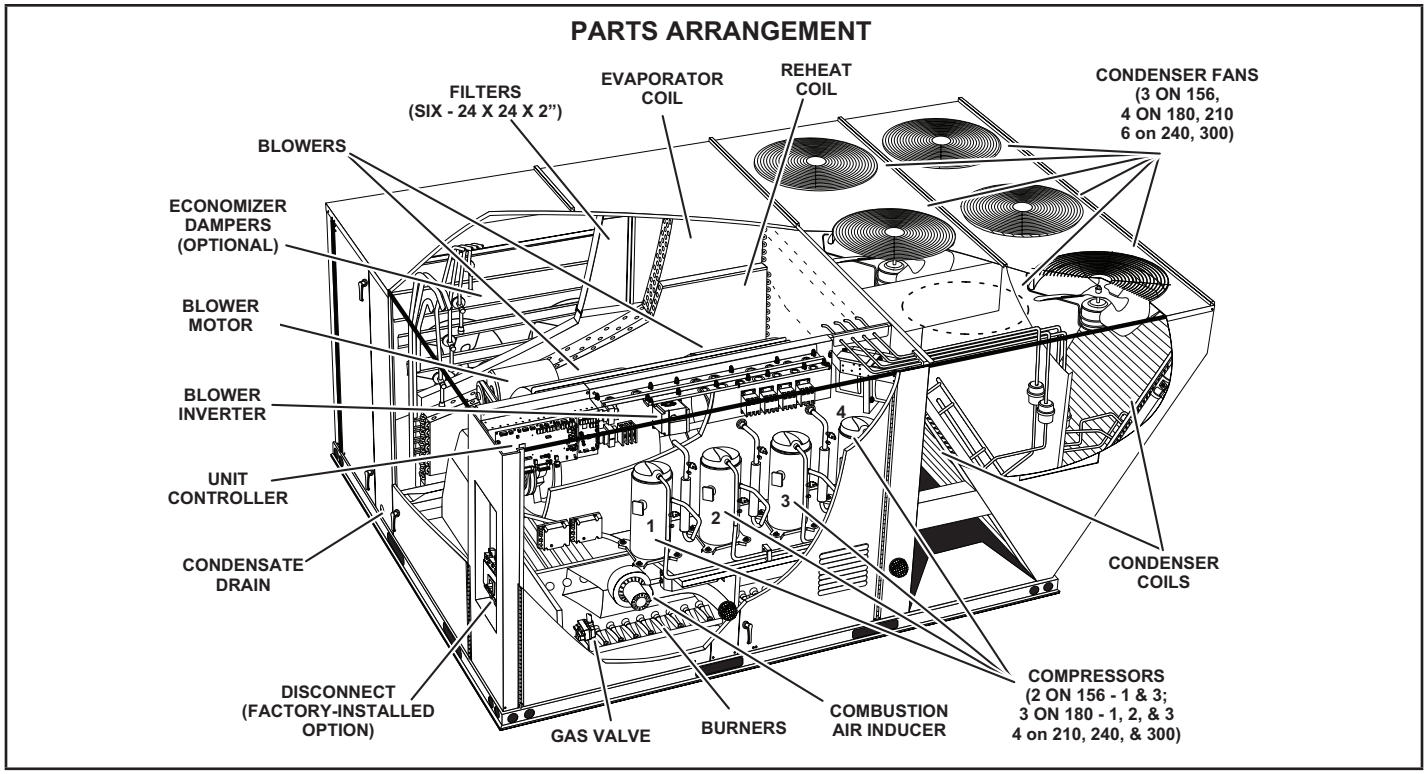



**FIGURE 1**

## 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.

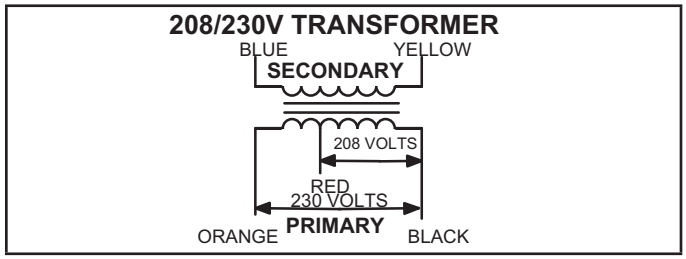



**FIGURE 2**

### 3-Contactor Transformer T18

T18 is a single line voltage to 24VAC transformer used in all LGT 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.

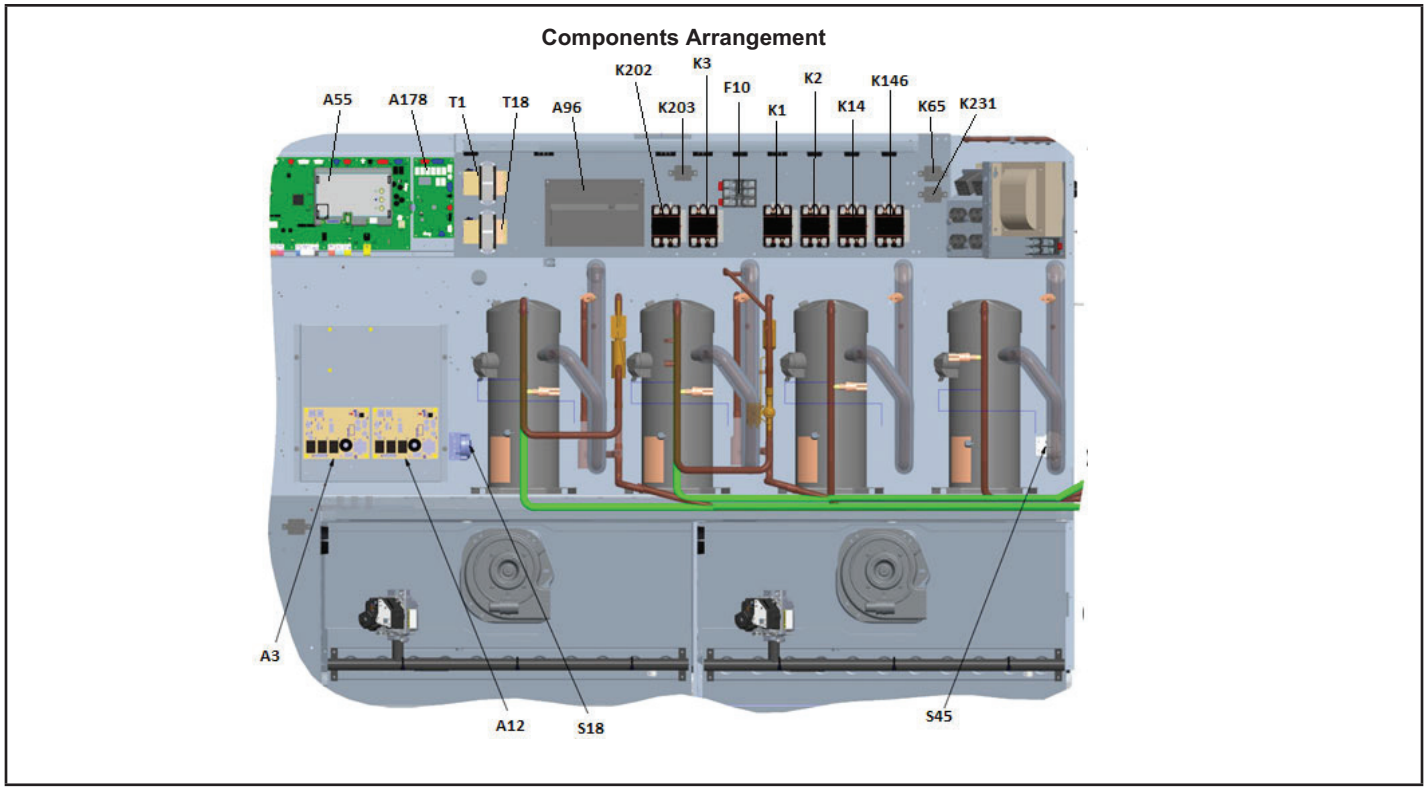



**FIGURE 3**

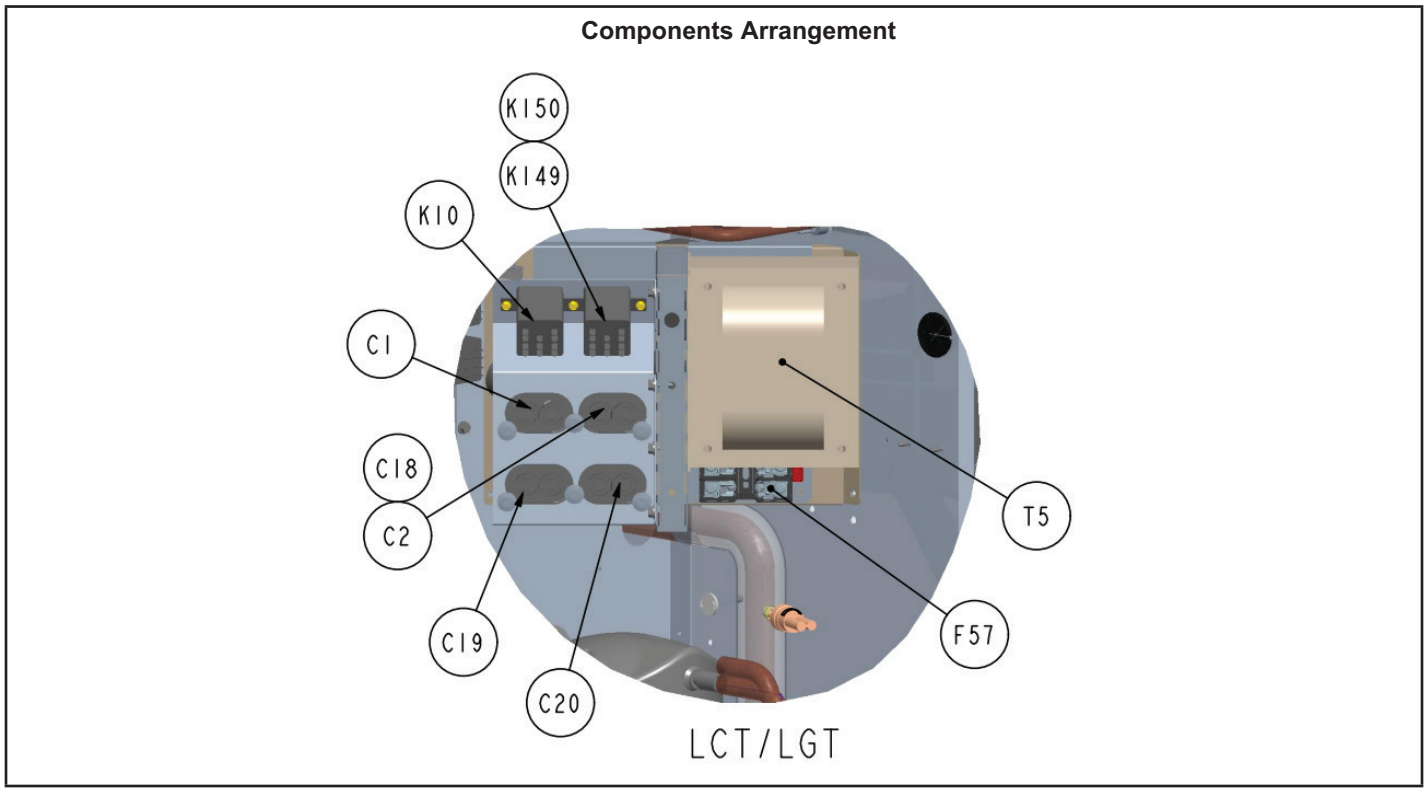



**FIGURE 4**

**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-Burner Controls A3 & A12**

Units have two burner controls. A3 controls gas heat section one and A12 controls gas heat section two. The first gas heat section and the second gas heat section burner controls are identical. Both burner controls are factory set and are not adjustable. The control makes three attempts at ignition and then locks out the system if ignition is not obtained after the third trial. Reset after lockout requires only breaking and remaking thermostat demand. The control shuts off gas flow immediately in the event of a gas or power failure.

Upon restoration of gas and power, the control will restart the ignition sequence and continue until flame is established or system locks out. For a more detailed description see the Gas Heat Components section.

**10-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.

**11-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.

**12-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.

**13-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.

**14-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.

**15-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 A55 unit controller is only compatible with L-Connection sensors provided with the unit or purchased separately as specified in the Product Specification. TABLE 1 through TABLE 4 show thermistor and pressure transducer readings.

**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.

**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.

**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.

**Temperature Sensors**

The return air (RT16) and discharge air (RT6) duct probes and the outdoor air (RT17) are all two wire thermistors. The resistance vs. temperature table is shown below:

**TABLE 1**

**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 | | |

**Room Sensors**

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

**TABLE 2**

**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 | | |

**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 3**

**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 | | |

**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 4**

**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 | | |

**16-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.

**17-Outdoor Fan Transformers T5**

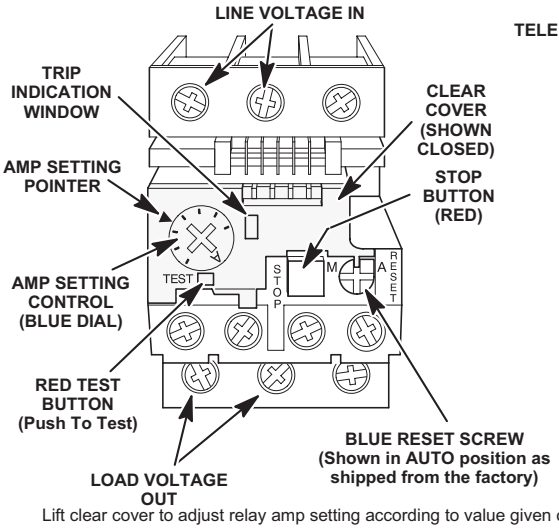
All 460 (G) and 575 (J) voltage units use transformer T5. The auto voltage to 230VAC transformer is mounted in the control box. The transformer has an output rating of 0.5A. T5 transformer supplies 230 VAC power to outdoor fans B21 (156), B5 & B22 (180/210), B21 & B24 (240/300).

**18-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.

**19-Blower Motor Overload Relay S42**

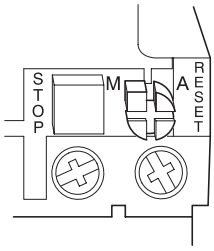
The relay (S42) is connected in line with the blower motor to monitor the current flow to the motor. When the relay senses an overload condition, a set of normally closed contacts open to de-energize pin #1 in plug P299 of the A55 Unit Controller. A55 de-energizes all outputs. Units will be equipped with a relay manufactured by Telemecanique FIGURE 5 or Siemens FIGURE 6.




**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.

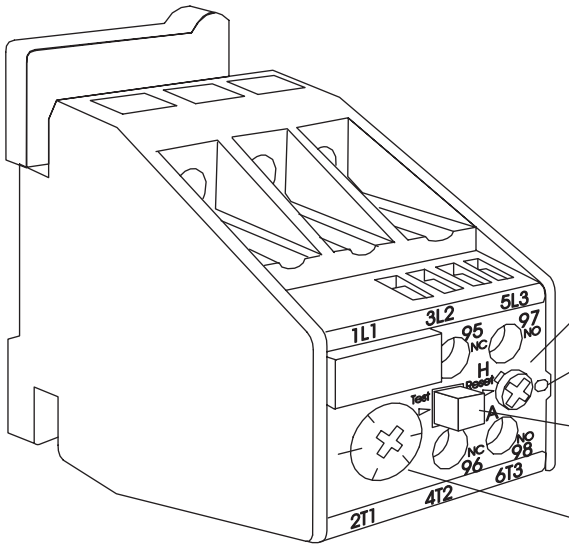
Cover must also be lifted to adjust control mode from automatic reset to manual reset (see detail above) and to test the control.

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 5**

**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 6**

**Compressor Detail**
**B1, B2**

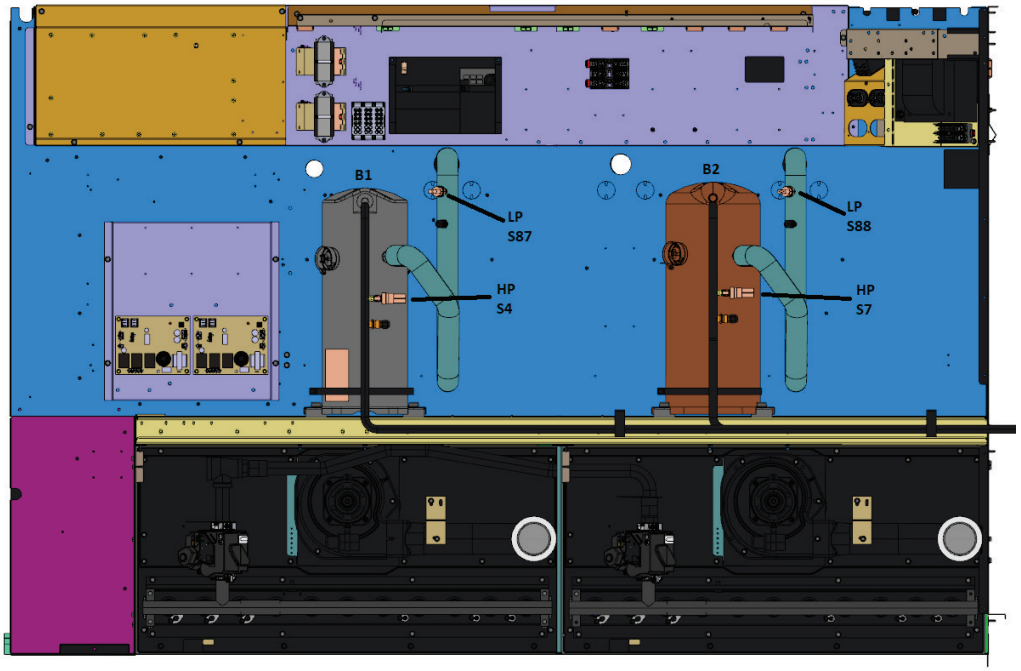



**FIGURE 7**

**Compressor Detail**
**B1, B2, B13**

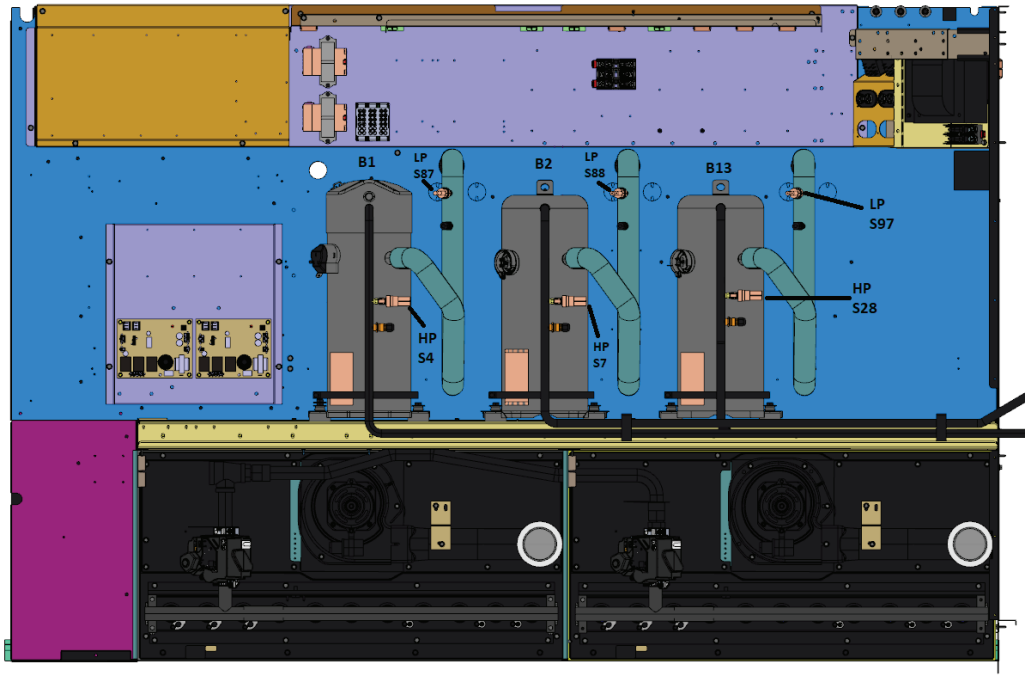



**FIGURE 8**

**Compressor Detail**
**B1, B2, B13, B20**

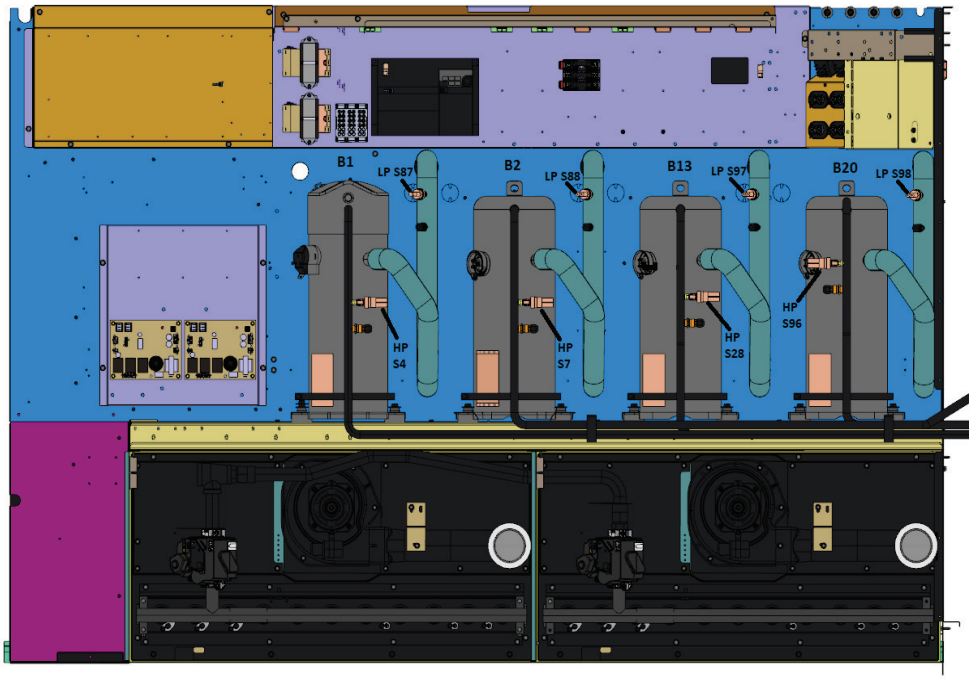



**FIGURE 9**

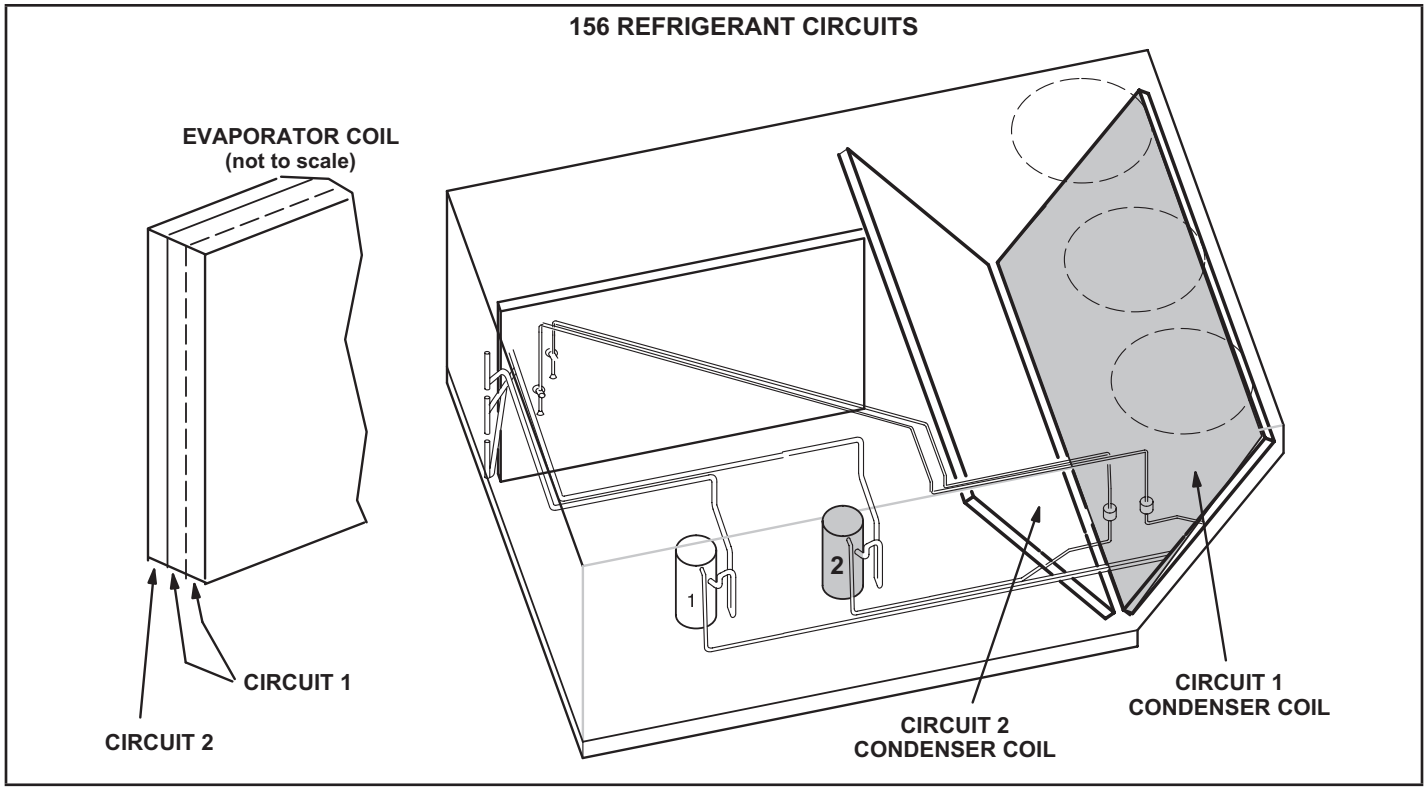



**FIGURE 10**

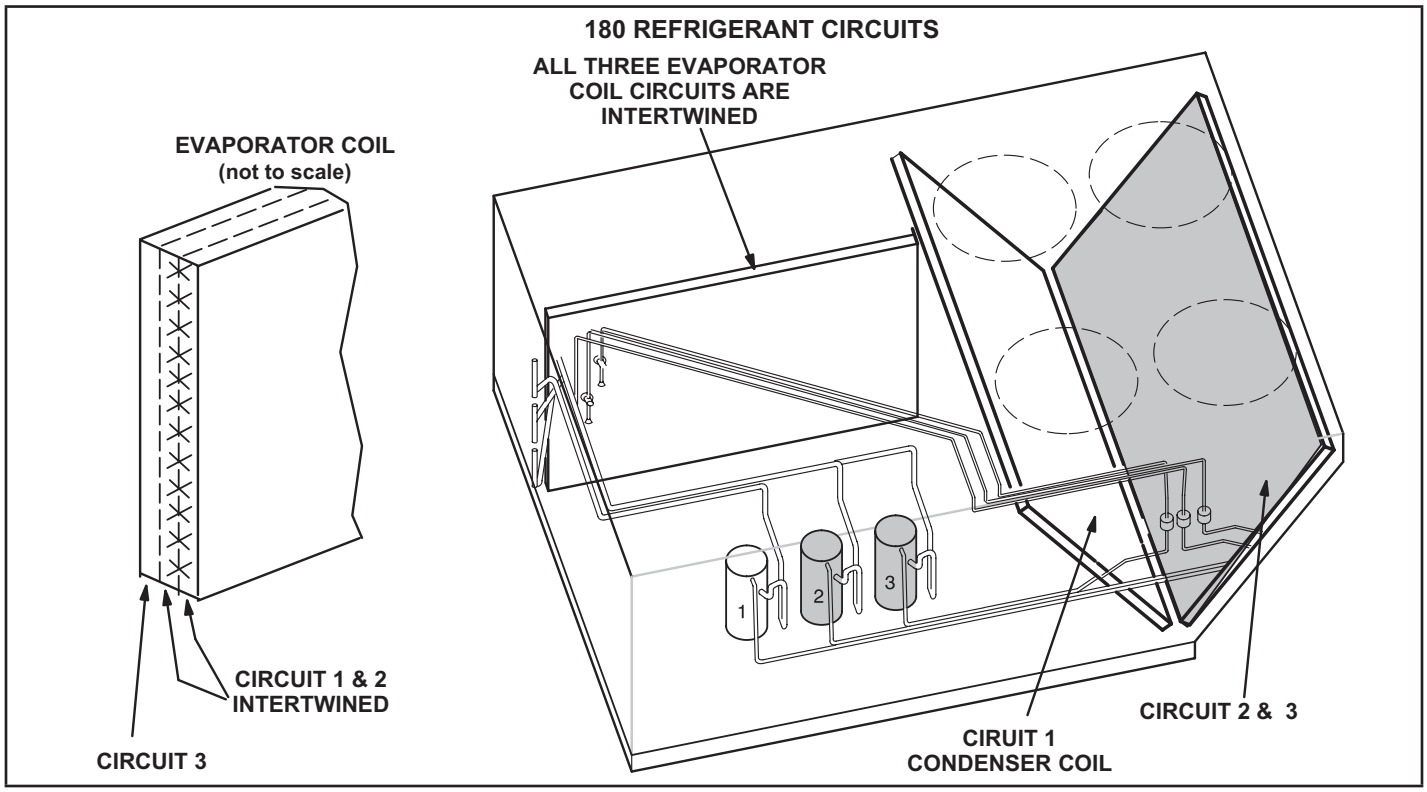



**FIGURE 11**

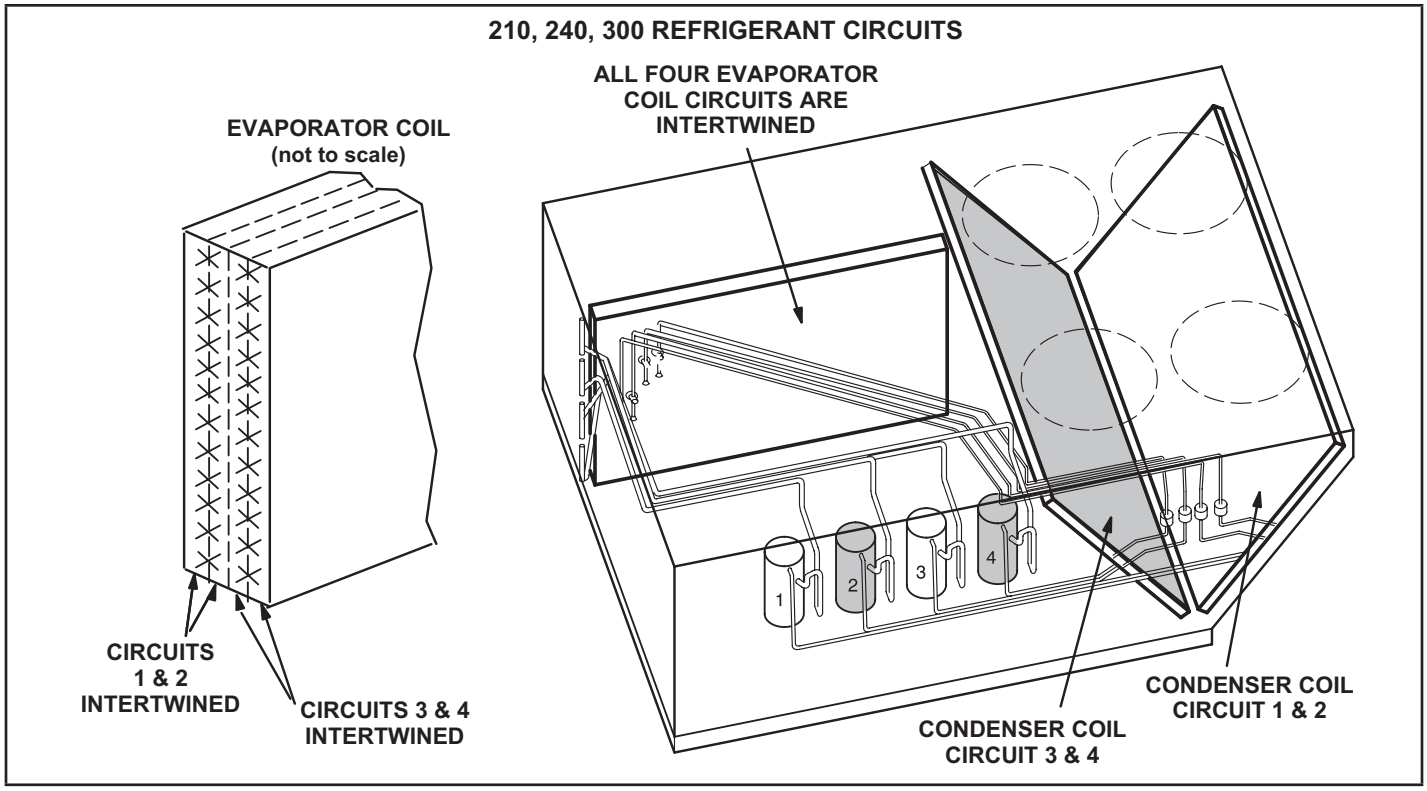



**FIGURE 12**

**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 LGT156, four draw-through type condenser fans are used in LGT180, 210 units and six draw-through type condenser fans are used in LGT240, 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. LGT156 use 2 compressors, 180 use 3 compressors and LGT 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 LGT 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 7, FIGURE 8 and FIGURE 9.

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 7, FIGURE 8 and FIGURE 9.

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 14.

**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 14.

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 13.

***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 14. Do not exceed minimum and maximum number of pulley turns as shown in TABLE 5.

**TABLE 5**

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.

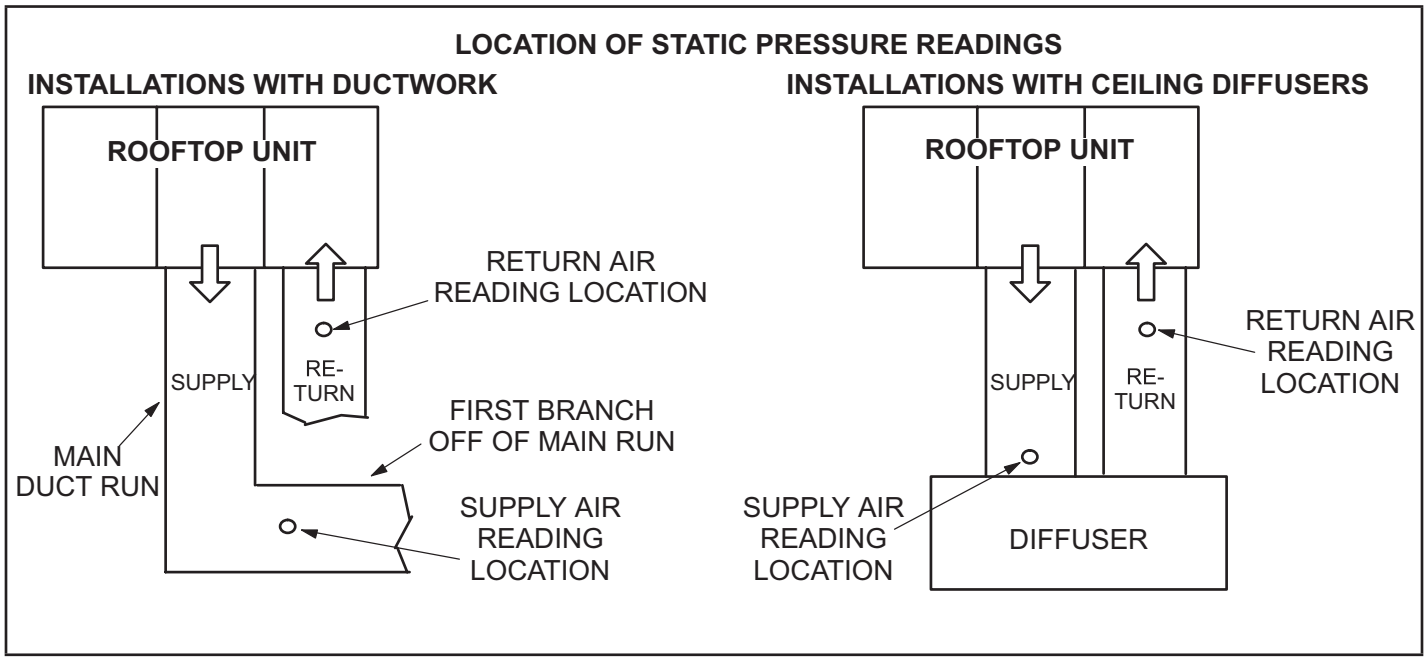



**FIGURE 13**

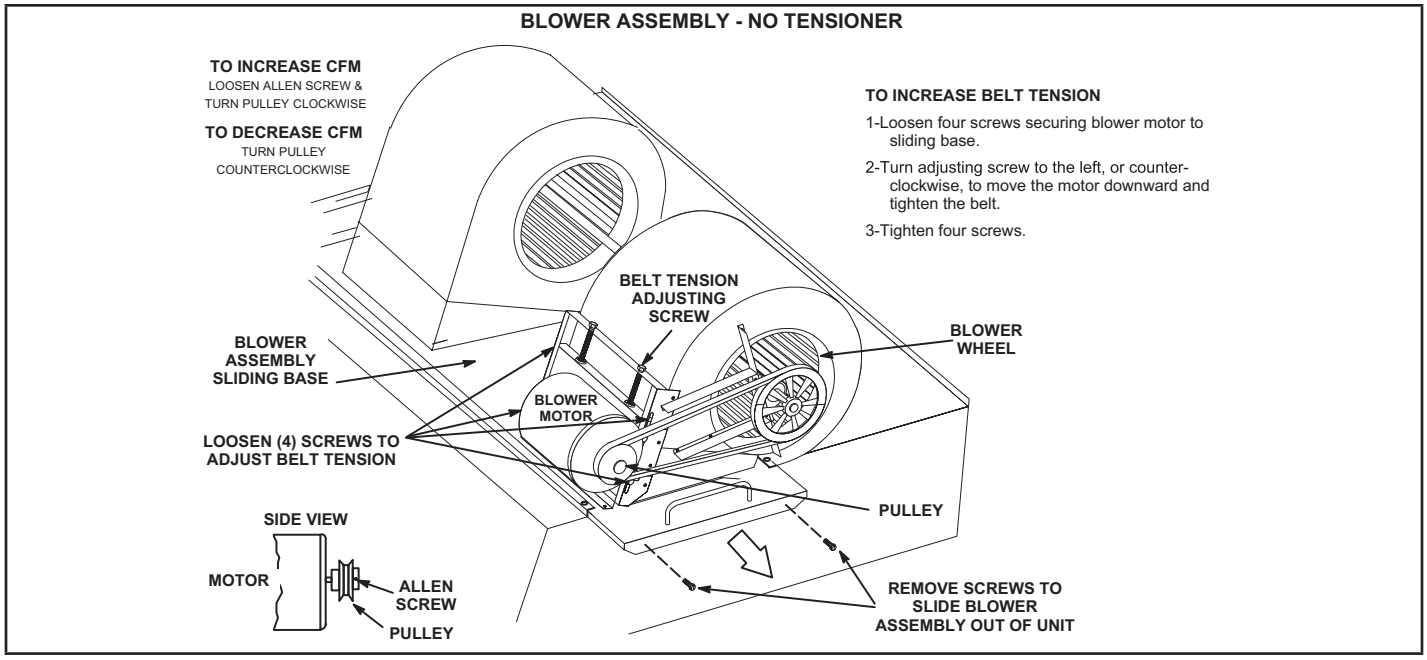



**FIGURE 14**

### 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 15 for blowers not equipped with a tensioner and FIGURE 16 for units equipped with an optional belt tensioner.

***Blowers Without Belt Tensioner***

1 - Loosen four screws securing blower motor to sliding base. See FIGURE 14.

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.

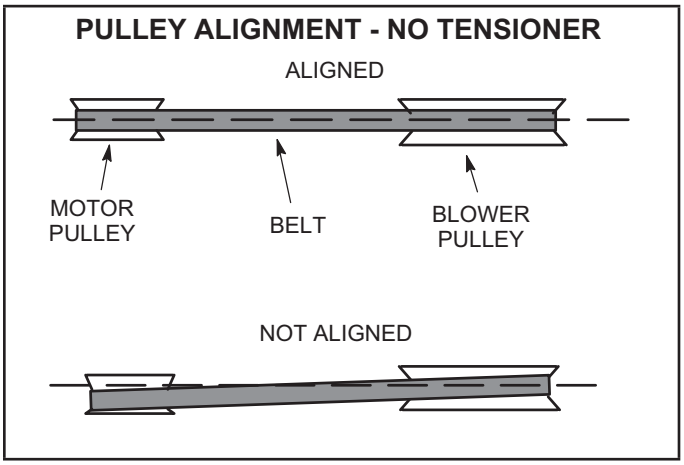



**FIGURE 15**

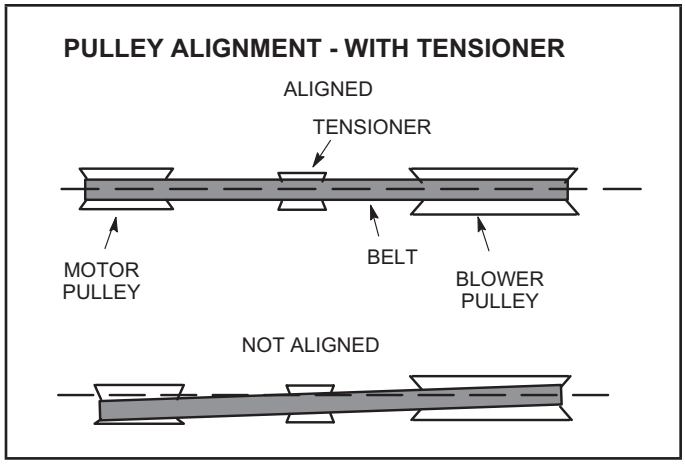



**FIGURE 16**

**E-Check Belt Tension**

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

1 - Measure span length X. See FIGURE 17.

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.

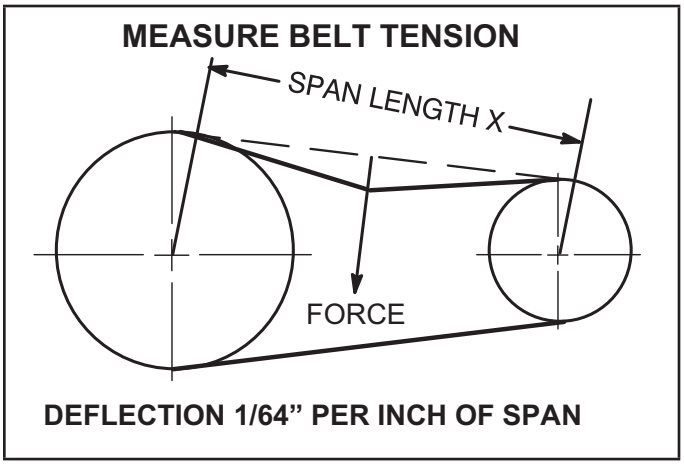



**FIGURE 17**

**F-Field-Furnished Blower Drives**

See BLOWER DATA tables for blower drives.

## D-GAS HEAT COMPONENTS

See SPECIFICATIONS tables or unit nameplate for Btuh capacities. Units are equipped with two identical gas heat sections (gas heat section one and gas heat section two) see FIGURE 18. Stainless steel flex pipe will feed supply gas to the right side and black pipe will feed the left side. If for service the flexible connection must broken, hand tighten then turn additional 1/4" with a wrench for metal to metal seal (do not overtighten).

***NOTE -*** *Do not use thread sealing compound on flex pipe flare connections.*

### 1-Control Box Components A3, A12, A55

**⚠ WARNING**

**Shock hazard. Spark related components contain high voltage which can cause personal injury or death. Disconnect power before servicing. Control is not field repairable. Unsafe operation will result. If control is inoperable, simply replace the entire control.**

### Burner Ignition Control A3, A12

The ignition controls are located in the heat section areas (FIGURE 18) below the compressors. The controls are manufactured UTEC. See TABLE 6 for LED codes. The ignition control provides three main functions: gas valve control, ignition and flame sensing. There are three trials for ignition. Each trial is 10 second long with 30 seconds in between trial. After the third attempt for ignition the unit will lockout for 60 minutes. After lockout, the ignition control automatically resets and provides three more attempts at ignition. Manual reset after lockout requires breaking and remaking power to the ignition control. See FIGURE 19 for a normal ignition sequence and FIGURE 20 for the ignition attempt sequence with retrials (nominal timings given for simplicity). Specific timings for the ignition controls are shown in FIGURE 21.

**TABLE 6**

| LED Flashes | Indicates |
|---|---|
| Slow Flash | Control ok, no call for heat |
| Fast Flash | Control ok, call for heat present. |
| Steady Off | Control ok, call for heat present. |
| Steady On Failure | Control internal failure |
| 1 Flash | Rollout switch open |
| 2 Flashes | Limit open or lockout from to many tries during a single heat demand |
| 3 Flashes | Pressure switch open with inducer on/ open during 5 minute inducer off time. |
| 4 Flashes | Ignition lockout from no flame detected or from too many flame losses. |
| 5 Flashes | Flame sensed out of sequence |
| 6 Flashes | Pressure switch closed with inducer off |
| 7 Flashes | Gas valve relay failure |
| 8 Flashes | Lockout due to too many pressure switch openings during one heat demand |

**GAS HEAT COMPONENTS**

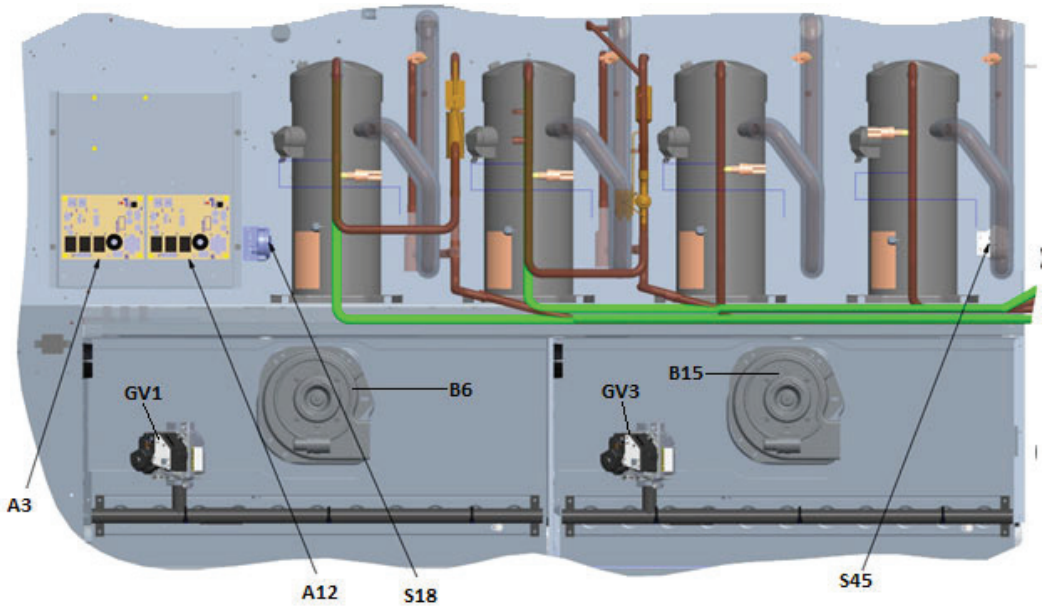



**FIGURE 18**

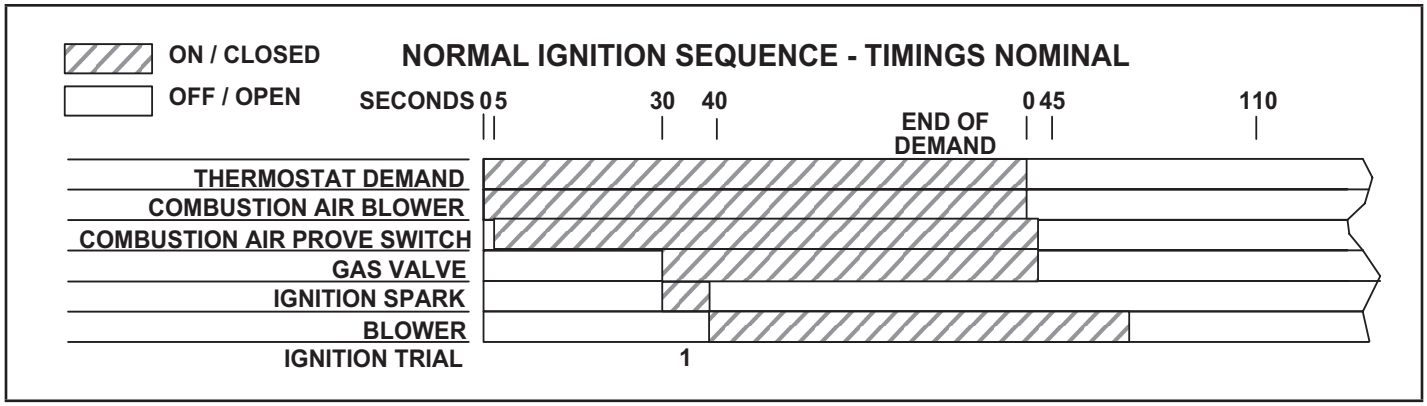



**FIGURE 19**

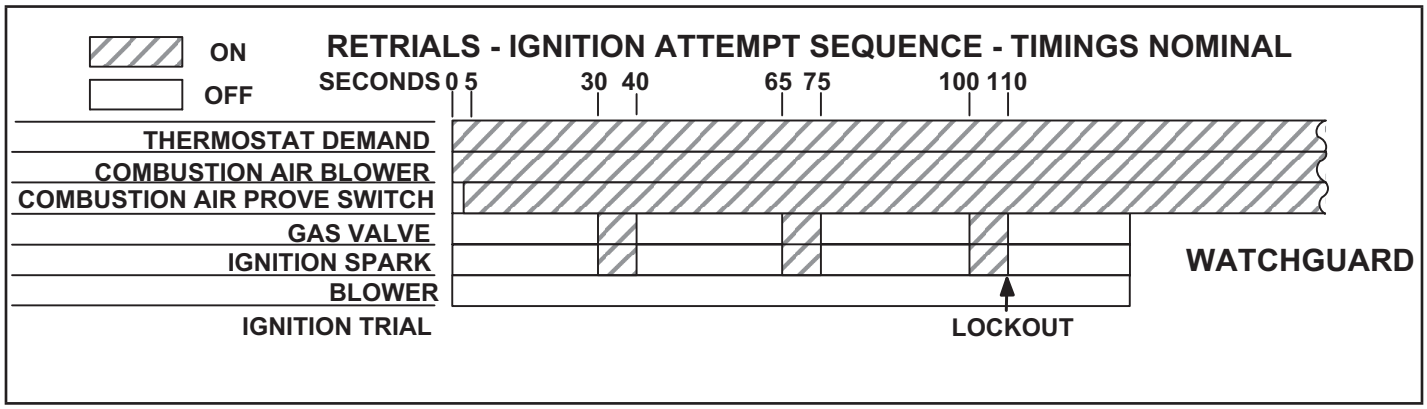



**FIGURE 20**

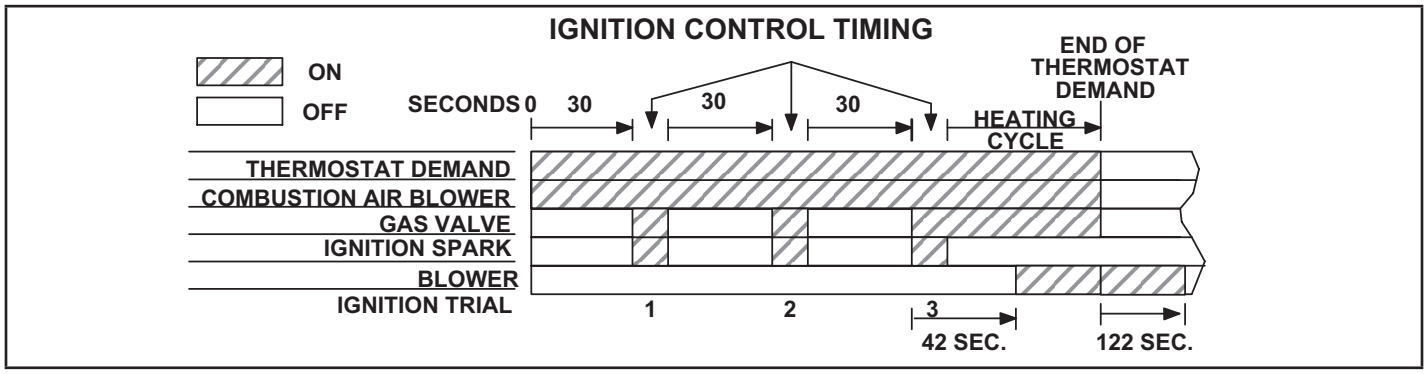



**FIGURE 21**

Flame rectification sensing is used on all units. Loss of flame during a heating cycle is indicated by an absence of flame signal (0 microamps). If this happens, the control will immediately restart the ignition sequence and then lock out if ignition is not gained after the third trial. See System Service Checks section for flame current measurement.

The control shuts off gas flow immediately in the event of a power failure. Upon restoration of gas and power, the control will restart the ignition sequence and continue until flame is established or system locks out.

On a heating demand, the ignition control is energized by the A55 Unit Controller. The ignition control then allows 30 to 40 seconds for the combustion air blower to vent exhaust gases from the burners.

When the combustion air blower is purging the exhaust gases, the combustion air prove switch is closing proving that the combustion air blower is operating before allowing the ignition control to energize.

When the combustion air prove switch is closed and the delay is over, the ignition control activates gas valve, the spark electrode and the flame sensing electrode. Sparking stops immediately after flame is sensed. The combustion air blower continues to operate throughout the heating demand. If the flame fails or if the burners do not ignite, the ignition control will attempt to ignite the burners up to two more times. If ignition cannot be obtained after the third attempt, the control will lock out. The ignition control is not adjustable

**2-Heat Exchanger (FIGURE 22)**

Units use aluminized steel cluster inshot burners with matching tubular aluminized (stainless steel is an option) steel heat exchangers and two-stage redundant gas valves. LGT156/300 uses two eleven-tube/burners for high heat, two six-tube/burners for standard or low heat and two nine-tube/burners for medium heat. Burners in all units use a burner venturi to mix gas and air for proper combustion. Combustion takes place at each tube entrance.

As hot combustion gases are drawn upward through each tube by the combustion air blower, exhaust gases are drawn out the top and fresh air/gas mixture is drawn in at the bottom. Heat is transferred to the air stream from all surfaces of the heat exchanger tubes. The supply air blowers, controlled by the Unit Controller A55, force air across all surfaces of the tubes to extract the heat of combustion. The shape of the tubes ensures maximum heat exchange. The gas valves accomplish staging by allowing more or less gas to the burners as called for by heating demand.

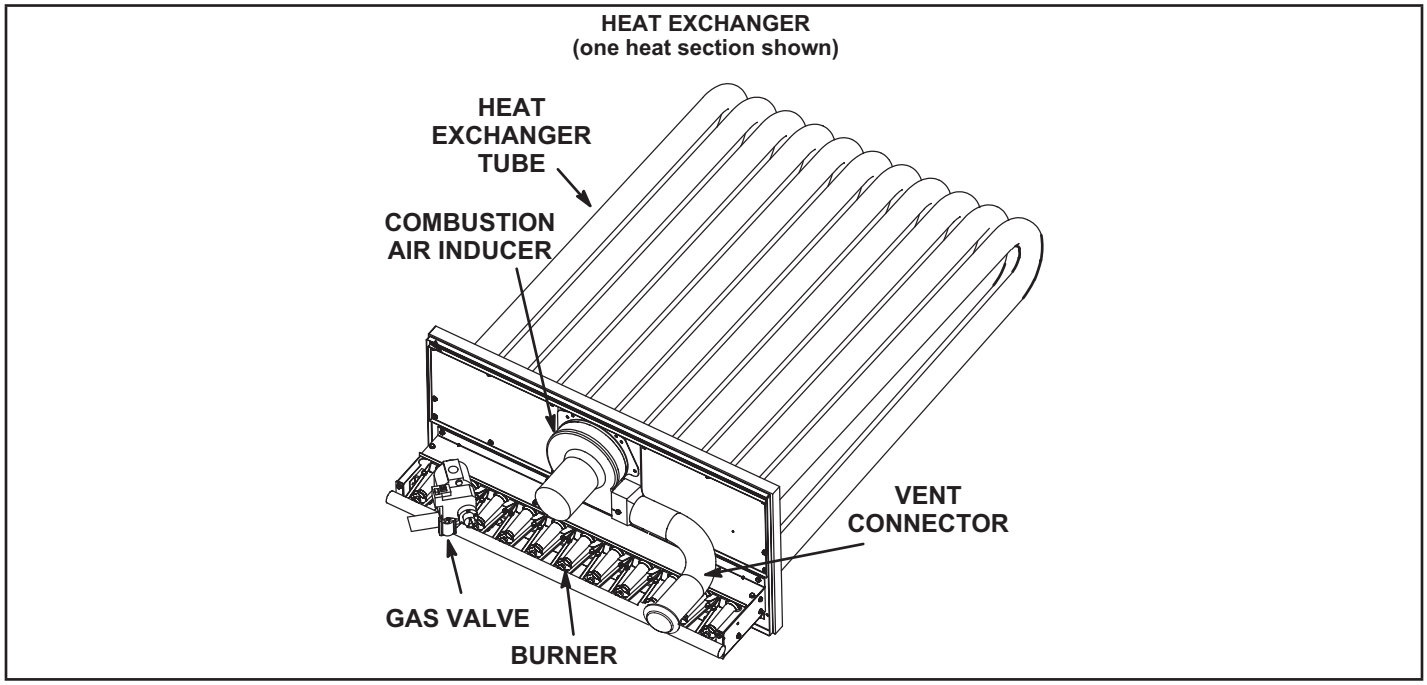



**FIGURE 22**

### 3-Burner Assembly (FIGURE 23)

The burners are controlled by the spark electrode, flame sensing electrode, gas valve and combustion air blower. The spark electrode, flame sensing electrode and gas valve are directly controlled by ignition control. Ignition control and combustion air blower is controlled by Unit Controller A55.

**Burners**

All units use cluster inshot burners. Burners are factory set and do not require adjustment. A peep hole with cover is furnished in the heating access panel for flame viewing. Always operate the unit with the access panel in place. Burners can be removed for service. Burner maintenance and service is detailed in the SERVICE CHECKS section of this manual.

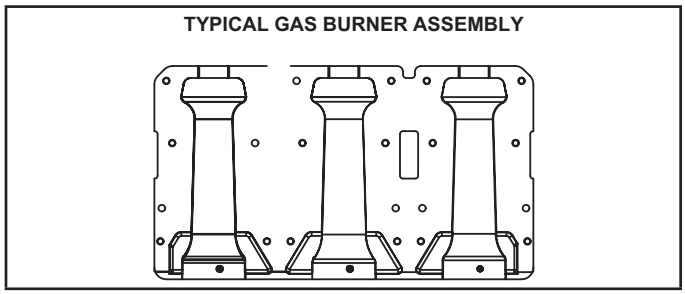



**FIGURE 23**

**Orifice**

Each burner uses an orifice (FIGURE 24) which is precisely matched to the burner input. Install only the orifices with the same threads. The orifice is threaded into the burner manifold. The burner is supported by the orifice and will easily slide off for service.

***NOTE-****Do not use thread sealing compound on the orifices. Using thread sealing compound may plug the orifices. Natural gas orifice size is on nameplate. The LP gas orifice size is on the label provided in the LP kit.*

***NOTE-*** *In primary and secondary high temperature limits S10 and S99 the ignition circuits in both gas heat sections one and two are immediately de-energized when terminals 1-3 open and the indoor blower motor is immediately energized when terminals 1-2 close. This is the primary and secondary safety shut-down function of the unit.*

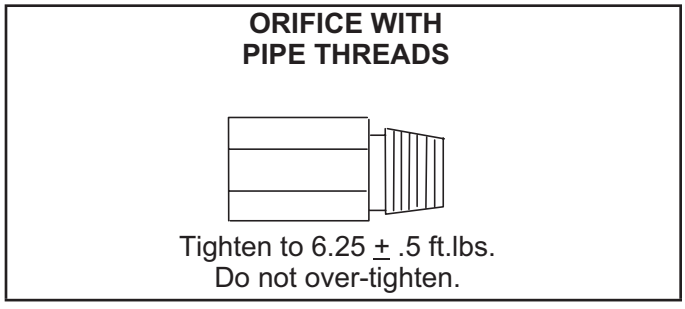



**FIGURE 24**

### 4-Primary High Temperature Limits S10 & S99

S10 is the primary high temperature limit for gas heat section one and S99 is the primary high temperature limit for gas heat section two.

In LGT156/300 units, S10 and S99 are located on the drip shield behind the blower housing. In this location S10 and S99 also serve as secondary limits. See FIGURE 25.

Primary limit S10 is wired to the Unit Controller A55 which energizes burner 1 control (A3), while primary limit S99 is wired to the A55 Unit Controller which energizes burner 2 control (A12). Its N.C. contacts open to de-energize the ignition control when excessive temperature is reached in the blower compartment. At the same time, the N.O. contacts of S10 and S99 close energizing the blower relay coil K3 through control A55. If either limit trips the blower will be energized. Limits settings are factory set and cannot be adjusted. If limit must be replaced same type and set point must be used. See Repair Parts Handbook.

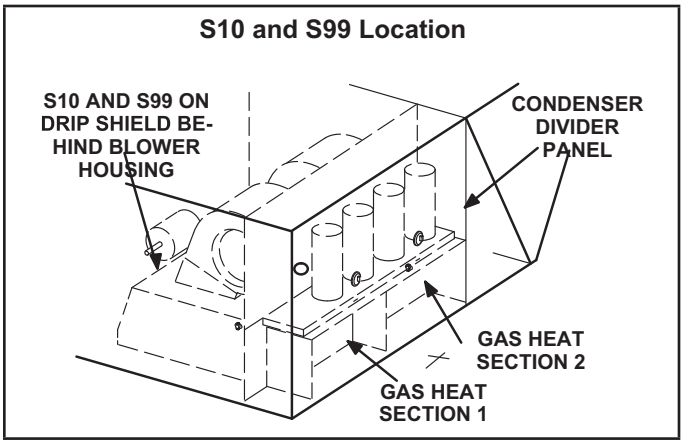



**FIGURE 25**

### 5-Flame Rollout Limits S47, S69

Flame rollout limits S47 on first heat section and S69 on second heat section are SPST N.C. high temperature limits located just above the burner air intake opening in the burner enclosures (see figure22). Both switches are wired to the A55 Unit Controller. When S47 or S69 senses flame rollout (indicating a blockage in the combustion air passages), the corresponding flame rollout limit trips and the ignition control immediately closes the gas valve. Limit S47 and S69 in standard heat units are factory preset to open at 290F ± 12F on a temperature rise, while on high heat units both limits open at 270F ± 12F on a temperature rise. All flame rollout limits are manual reset.

### 6-Combustion Air Prove Switches S18, S45

Prove switches S18 (first heat section) and S45 (second heat section) are located in the compressor compartment. Each has its own control box. Both are identical SPST N.O. switches and monitor combustion air inducer operation. Switch S18 and S45 are wired to the A55 Unit Controller.

The switch closes on a negative pressure fall. This negative pressure fall and switch actuation allows the ignition sequence to continue (proves, by closing, that the combustion air inducer is operating before allowing the gas valve to open.) The combustion air prove switch is factory set and not adjustable. The switch will automatically open on a pressure rise (less negative pressure). TABLE 7 shows prove switch settings.

**TABLE 7**

**S18 & S45 Prove Switch Settings**

| Close“ w.c. | Open “ w.c. |
|---|---|
| 0.25 ± 5 | 0.10±5 |

**7-Combustion Air Inducers B6 & B15**

Combustion air blowers B6 on the first heat section and B15 on the second heat section, are identical blowers which provide fresh air to the corresponding burners while clearing the combustion chamber of exhaust gases. The blowers begin operating immediately upon receiving a thermostat demand and are de-energized immediately when thermostat demand is satisfied.

Both combustion air blowers use a 208/230 or 460V single-phase PSC motor and a 4.81in. x 1.25in blower wheel. All motors operate at 3200 or 3450 RPM and are equipped with auto-reset overload protection. Blowers are supplied by various manufacturers. Ratings may vary by manufacturer. Specific blower electrical ratings can be found on the unit rating plate.

All combustion air blower motors are sealed and cannot be oiled. The blower cannot be adjusted but can be disassembled for cleaning.

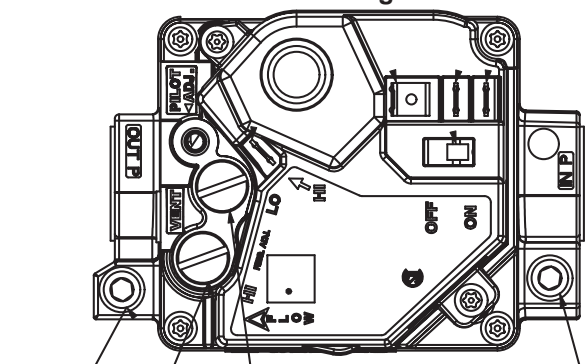
**8-Combustion Air Motor Capacitors C3 & C11**

The combustion air blower motors in all LGT units require run capacitors. Capacitor C3 is connected to combustion air blower B6 and C11 is connected to combustion air blower B15. Capacitors are rated at 208/230V CAB has 4uF 450V capacitors 460V CAB has 2uF 450V capacito3 or 4 MFD for 208/230 CAB.

**9-Gas Valves GV1 & GV3**

Gas valves GV1 and GV3 are identical. The gas valves are two-stage redundant valves. Units are equipped with valves manufactured by WhiteRodgers.. On a call for first stage heat (low fire), the valve is energized by the ignition control simultaneously with the spark electrode. On a call for second stage heat (high fire), the second stage operator is energized directly from A55 (GV1, GV3). The valve is adjustable for both low fire and high fire. A manual shut-off knob is provided on the valve for shut-off. Manual shut-off knob immediately closes both stages without delay. FIGURE 26 shows gas valve components. TABLE 8 shows factory gas valve regulation for LGT series units.

**WHITE RODGERS 36H54 GAS VALVE**
**Two-Stage**




Outlet Pressure Tap
Low Fire Adjustment (under cap)
Inlet Pressure Tap
High Fire Adjustment (under cap)

GAS VALVE SWITCH SHOWN IN **ON** POSITION.

**FIGURE 26**

**TABLE 8**

**GAS VALVE REGULATION FOR LGT UNITS**

| Max Inlet Pressure “W.C. | Operating Pressure “W.C. (outlet) Factory Setting | | | |
|---|---|---|---|---|
| | Natural | | L.P. Propane | |
| | Low | High | Low | High |
| 13.0 | 1.6±0.2. | 3.7±0.3 | 5.5±0.3 | 0.5±0.5 |

**10-Spark Electrodes**

An electrode assembly is used for ignition spark. Two identical electrodes are used (one for each gas heat section). The electrode is mounted through holes on the left-most end of the burner support. The electrode tip protrudes into the flame envelope of the adjacent burner.

The electrode assembly is fastened to burner supports and can be removed for service without removing any part of the burners.

During ignition, spark travels through the spark electrode (FIGURE 27) and ignites the left burner. Flame travels from burner to burner until all are lit.

The spark electrode is connected to the ignition control by a 8 mm silicone-insulated stranded high voltage wire. The wire uses 1/4” female quick connect on the electrode end and female spark plug-type terminal on the ignition control end.

***NOTE-*** *IN ORDER TO MAXIMIZE SPARK ENERGY TO ELECTRODE, HIGH VOLTAGE WIRE SHOULD TOUCH UNIT CABINET AS LITTLE AS POSSIBLE.*

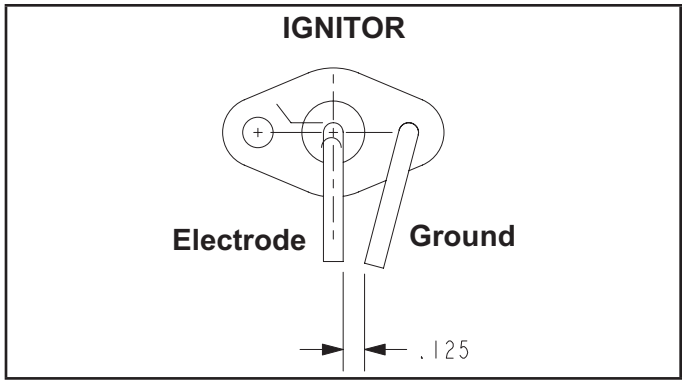



**FIGURE 27**

**11-Flame Sensors**

A flame sensor is located on the right side of each burner support. The sensor is mounted through a hole in the burner support and the tip protrudes into the flame envelope of the right most burner. The sensor assembly is fastened to burner supports and can be removed for service without removing any part of the burners.

When flame is sensed by the flame sensor (indicated by microamp signal through the flame) sparking stops immediately. During operation, flame is sensed by current passed along the ground electrode (located on the spark electrode), through the flame and into the sensing electrode. The ignition control allows the gas valve to stay open as long as a flame signal (current passed through he flame) is sensed.

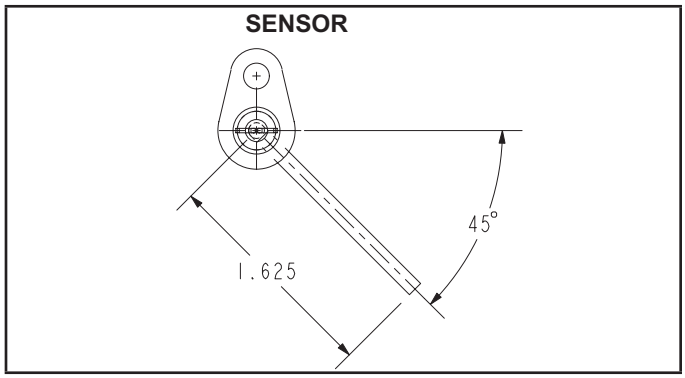



**FIGURE 28**

**II-PLACEMENT AND INSTALLATION**

Make sure the unit is installed in accordance with the installation instructions and all applicable codes. See accessories section for conditions requiring use of the optional roof mounting frame.

**III-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.

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

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

**IMPORTANT - Charge unit in normal cooling mode.**

1 - Attach gauge manifolds to discharge and suction lines. With the economizer disabled, operate the unit in cooling mode at high speed using the following mobile service app menu path:

SERVICE>TEST>COOL>COOL 4

2 - Use a thermometer to accurately measure the outdoor ambient temperature.

3 - Apply the outdoor temperature to TABLE 9 through TABLE 18 to determine normal operating pressures. Pressures are listed for sea level applications at 80°F dry bulb and 67°F wet bulb return air.

4 - Compare the normal operating pressures to the pressures obtained from the gauges. Minor variations in these pressures may be expected due to differences in installations. Significant differences could mean that the system is not properly charged or that a problem exists with some component in the system. Correctany system problems before proceeding.

5 - If discharge pressure is high, remove refrigerant from the system. If discharge pressure is low, add refrigerant to the system.

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

6 - Confirm charge amount using liquid temperature plots. Fine tune charge amount(s) to match liquid temperature plots as needed per the next section.

**E-Charge Confirmation and Fine Tuning - Liquid Temperature Check**

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

1 - 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.

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

3 - 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.

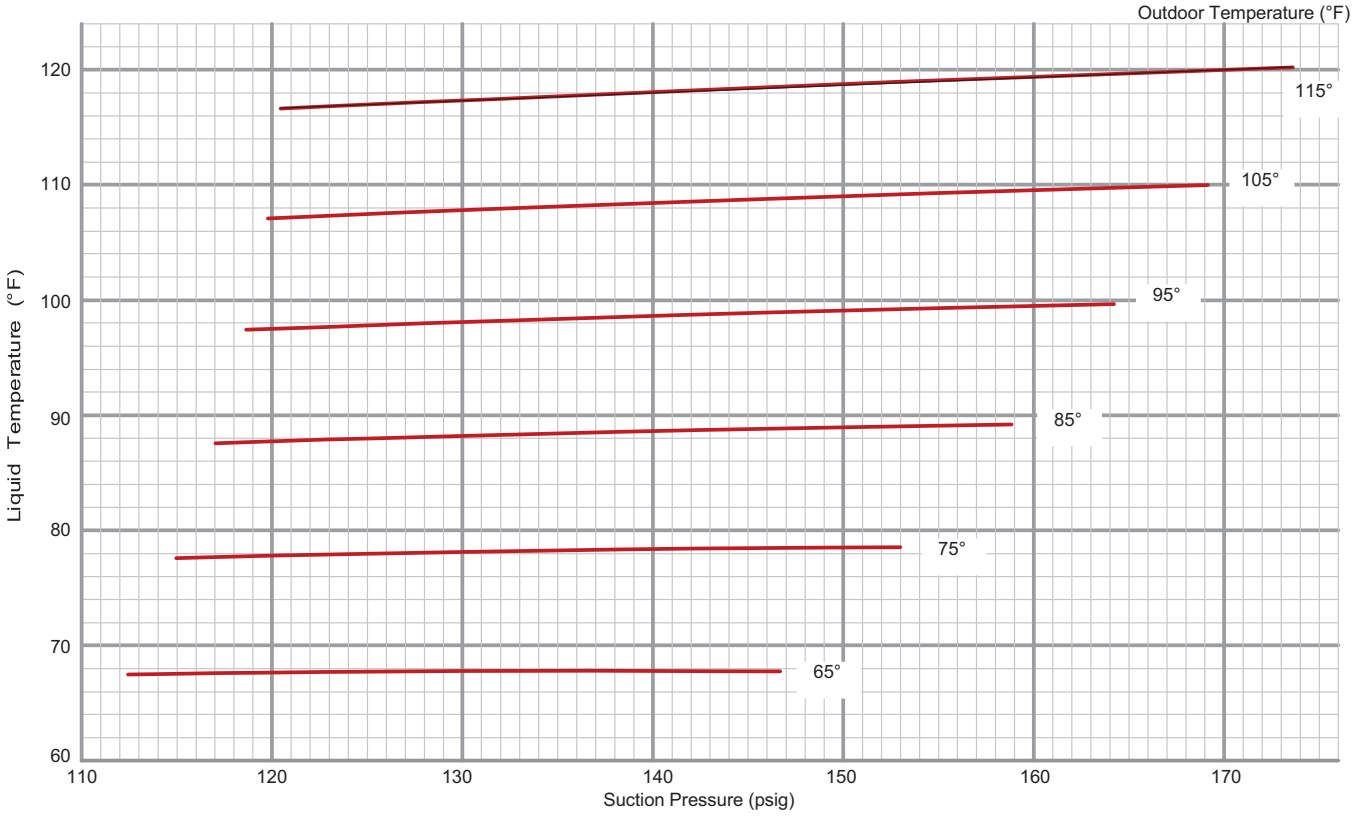
4 - Example: At 95°F outdoor ambient and a measured suction pressure of 130psig, the target liquid temperature is 98°F. For a measured liquid temperature of 106°F, add charge in increments until measured liquid temperature agrees with the target liquid temperature.

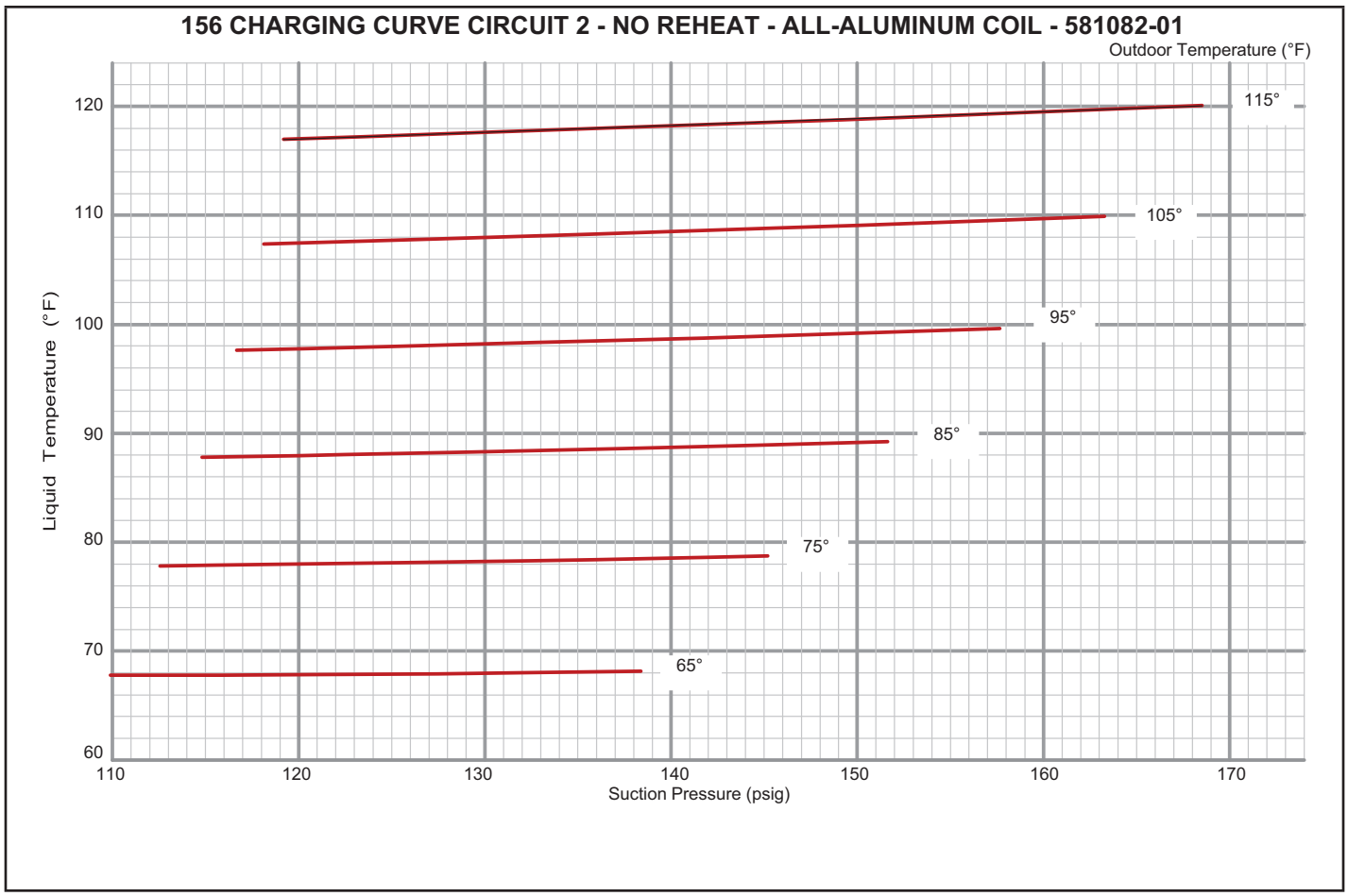
## TABLE 9

### 156 NORMAL OPERATING PRESSURES - NO REHEAT - ALL-ALUMINUM COIL - 581081-01

| | 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 | 112 | 231 | 115 | 269 | 117 | 313 | 119 | 362 | 120 | 416 | 120 | 475 |
| | 120 | 233 | 123 | 271 | 126 | 314 | 128 | 362 | 130 | 416 | 131 | 475 |
| | 133 | 240 | 138 | 277 | 142 | 319 | 146 | 366 | 150 | 419 | 153 | 477 |
| | 147 | 250 | 153 | 285 | 159 | 326 | 164 | 372 | 169 | 424 | 174 | 481 |
| Circuit 1 | 110 | 246 | 113 | 285 | 115 | 329 | 117 | 379 | 118 | 432 | 119 | 491 |
| | 116 | 249 | 119 | 288 | 122 | 333 | 125 | 382 | 127 | 435 | 129 | 494 |
| | 127 | 256 | 133 | 295 | 137 | 340 | 142 | 389 | 146 | 442 | 149 | 501 |
| | 138 | 264 | 145 | 304 | 152 | 348 | 158 | 396 | 163 | 450 | 169 | 509 |

### 156 CHARGING CURVE CIRCUIT 1 - NO REHEAT - ALL-ALUMINUM COIL - 581082-01



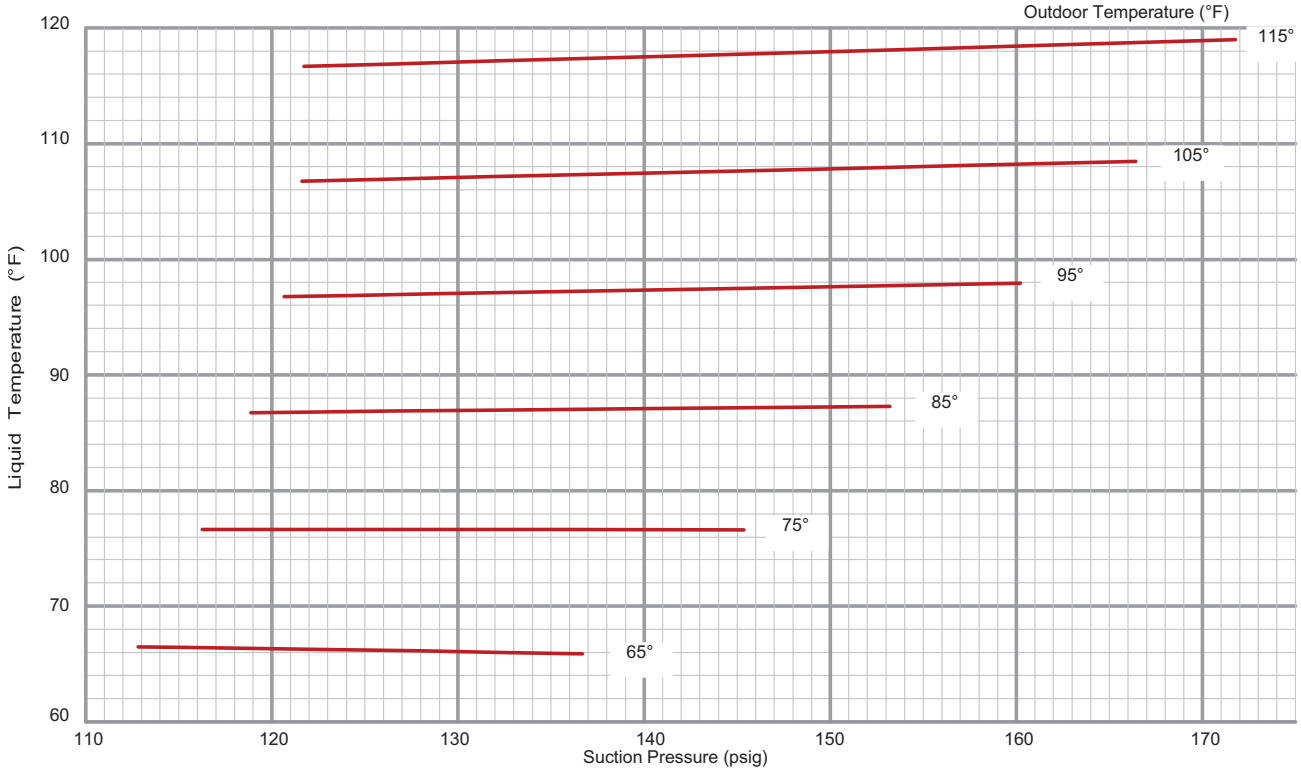

156 CHARGING CURVE CIRCUIT 2 - NO REHEAT - ALL-ALUMINUM COIL - 581082-01
Outdoor Temperature (°F)
115°
105°
95°
85°
75°
65°
Liquid Temperature (°F)
120
110
100
90
80
70
60
110
120
130
140
150
160
170
Suction Pressure (psig)

## TABLE 10

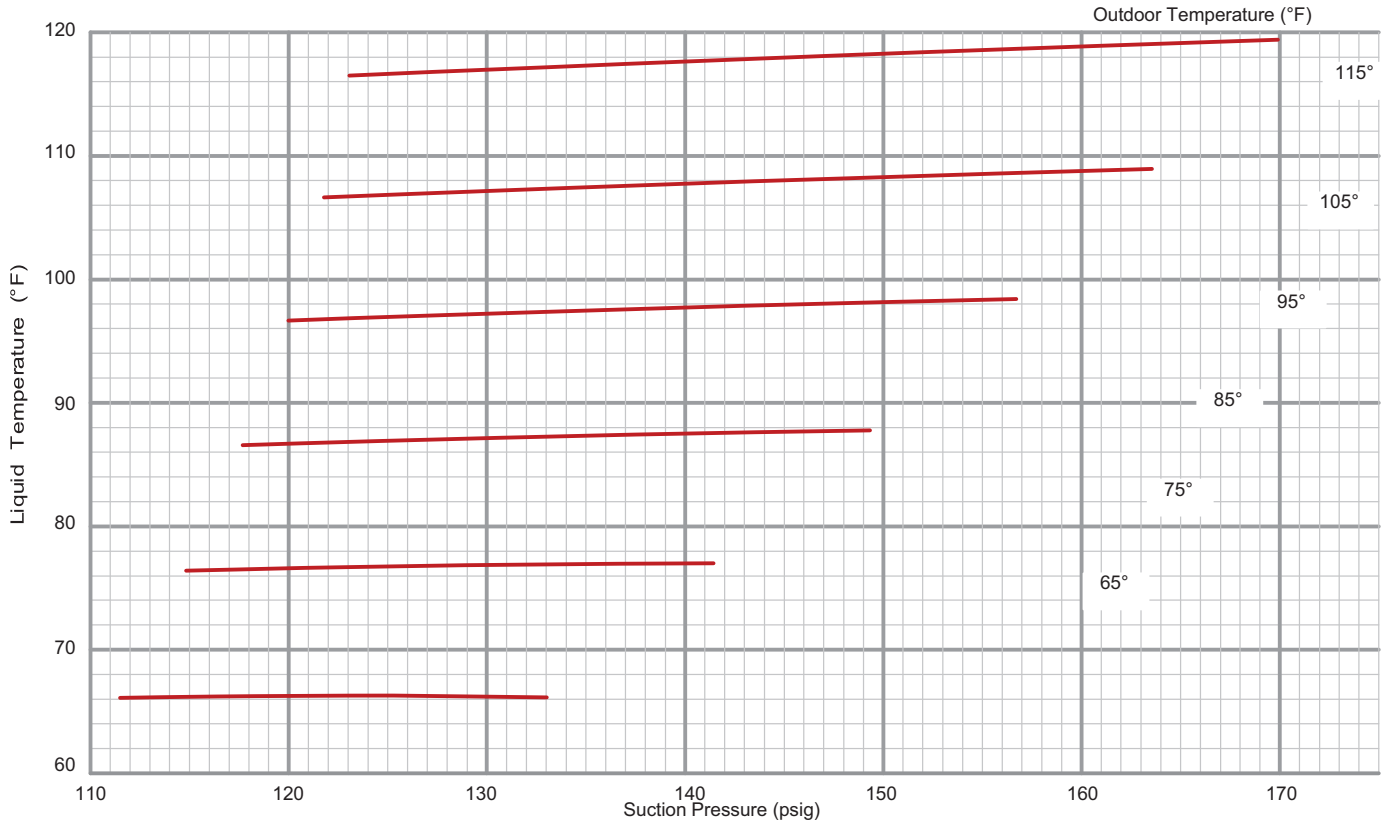
### 156 NORMAL OPERATING PRESSURES - REHEAT - ALL-ALUMINUM COIL - 581083-01

| | 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 | 113 | 245 | 116 | 282 | 119 | 324 | 121 | 372 | 122 | 425 | 122 | 484 |
| | 118 | 247 | 123 | 284 | 126 | 326 | 129 | 374 | 131 | 427 | 132 | 486 |
| | 128 | 255 | 135 | 291 | 140 | 333 | 145 | 380 | 149 | 433 | 153 | 492 |
| | 137 | 264 | 145 | 300 | 153 | 342 | 160 | 389 | 166 | 442 | 172 | 500 |
| Circuit 2 | 112 | 260 | 115 | 298 | 118 | 342 | 120 | 392 | 122 | 447 | 123 | 508 |
| | 116 | 262 | 121 | 300 | 125 | 344 | 128 | 393 | 131 | 449 | 133 | 510 |
| | 125 | 269 | 132 | 307 | 138 | 350 | 143 | 399 | 148 | 454 | 152 | 515 |
| | 133 | 280 | 141 | 318 | 149 | 361 | 157 | 409 | 164 | 464 | 170 | 524 |

### 156 CHARGING CURVE CIRCUIT 1 - REHEAT - ALL-ALUMINUM COIL - 581084-01



## 156 CHARGING CURVE CIRCUIT 2 - REHEAT - ALL-ALUMINUM COIL - 581084-01

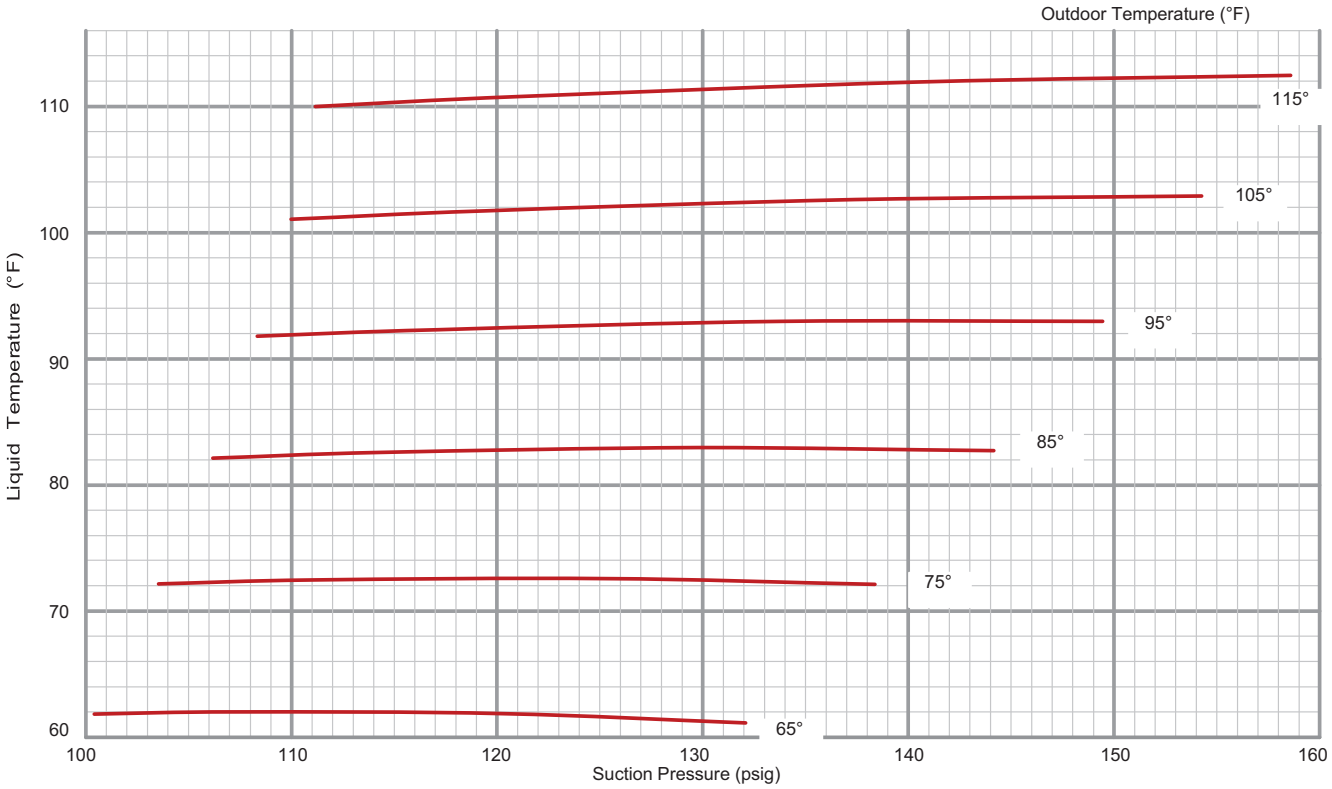


## TABLE 11

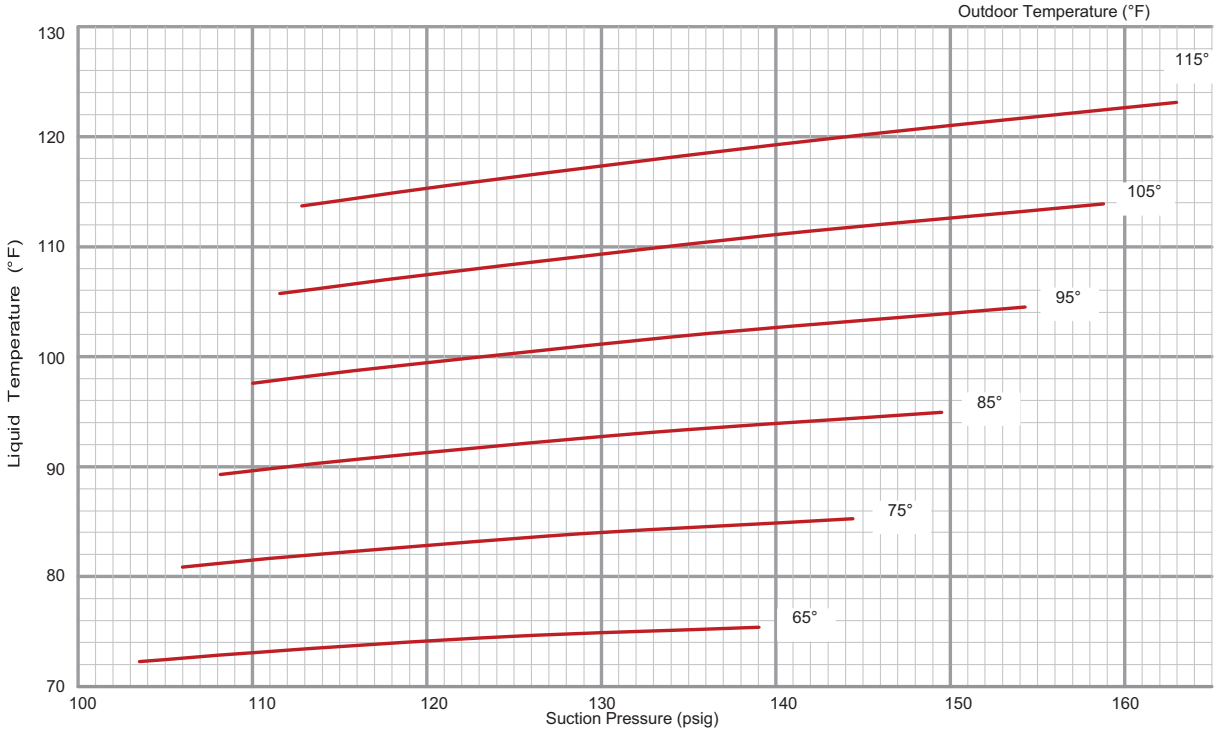
## 180 NORMAL OPERATING PRESSURES - NO REHEAT - ALL-ALUMINUM COIL - 581085-01

| | 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 | 100 | 217 | 104 | 249 | 106 | 287 | 108 | 331 | 110 | 379 | 111 | 433 |
| | 107 | 219 | 111 | 251 | 114 | 289 | 117 | 333 | 119 | 382 | 121 | 436 |
| | 120 | 222 | 125 | 255 | 130 | 293 | 134 | 337 | 137 | 386 | 140 | 440 |
| | 132 | 225 | 138 | 258 | 144 | 296 | 149 | 340 | 154 | 389 | 159 | 444 |
| Circuit 2 | 104 | 243 | 106 | 283 | 108 | 327 | 110 | 375 | 112 | 428 | 113 | 485 |
| | 110 | 246 | 113 | 286 | 116 | 330 | 119 | 378 | 121 | 431 | 123 | 489 |
| | 124 | 251 | 129 | 292 | 133 | 336 | 136 | 385 | 140 | 439 | 143 | 496 |
| | 139 | 258 | 144 | 299 | 150 | 344 | 154 | 393 | 159 | 447 | 163 | 505 |
| Circuit 3 | 119 | 242 | 119 | 282 | 120 | 325 | 123 | 373 | 127 | 424 | 131 | 479 |
| | 123 | 246 | 124 | 285 | 126 | 329 | 129 | 376 | 133 | 428 | 138 | 483 |
| | 135 | 252 | 138 | 292 | 141 | 336 | 145 | 384 | 150 | 435 | 157 | 491 |
| | 154 | 258 | 157 | 298 | 162 | 342 | 167 | 390 | 174 | 442 | 181 | 498 |

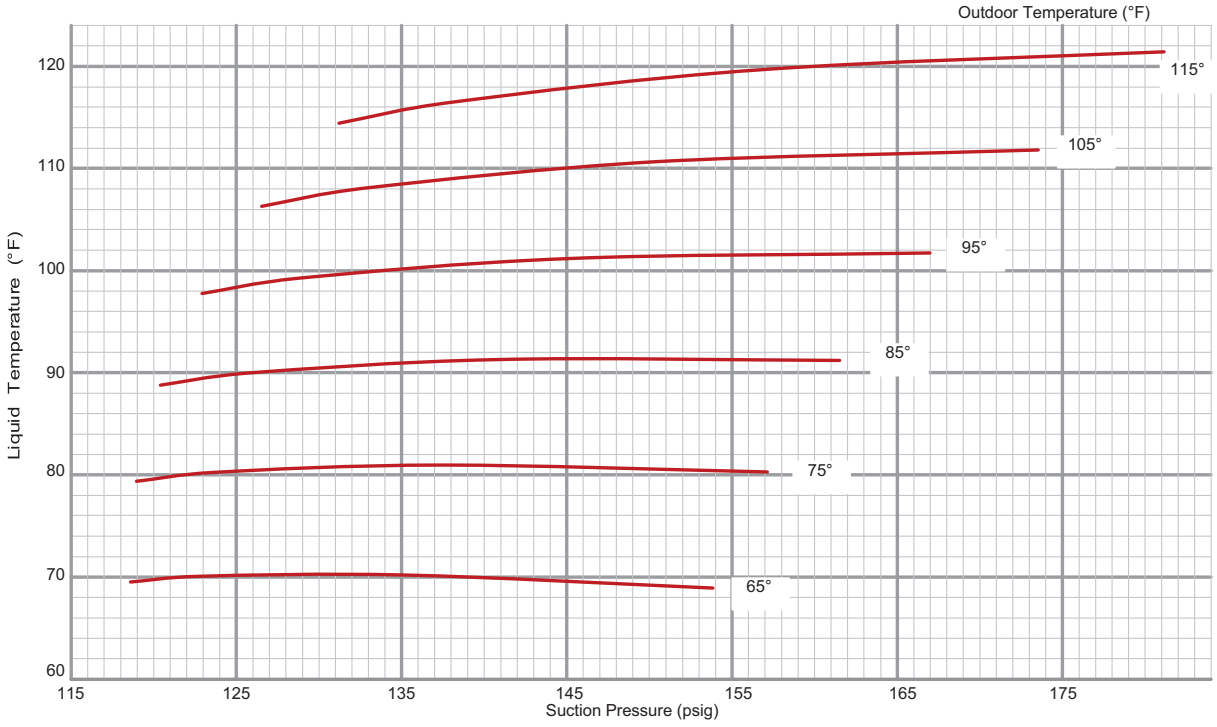
## 180 CHARGING CURVE CIRCUIT 1 - NO REHEAT - ALL-ALUMINUM COIL - 581086-01



## 180 CHARGING CURVE CIRCUIT 2 - NO REHEAT - ALL-ALUMINUM COIL - 581086-01




## 180 CHARGING CURVE CIRCUIT 3 - NO REHEAT - ALL-ALUMINUM COIL - 581086-01

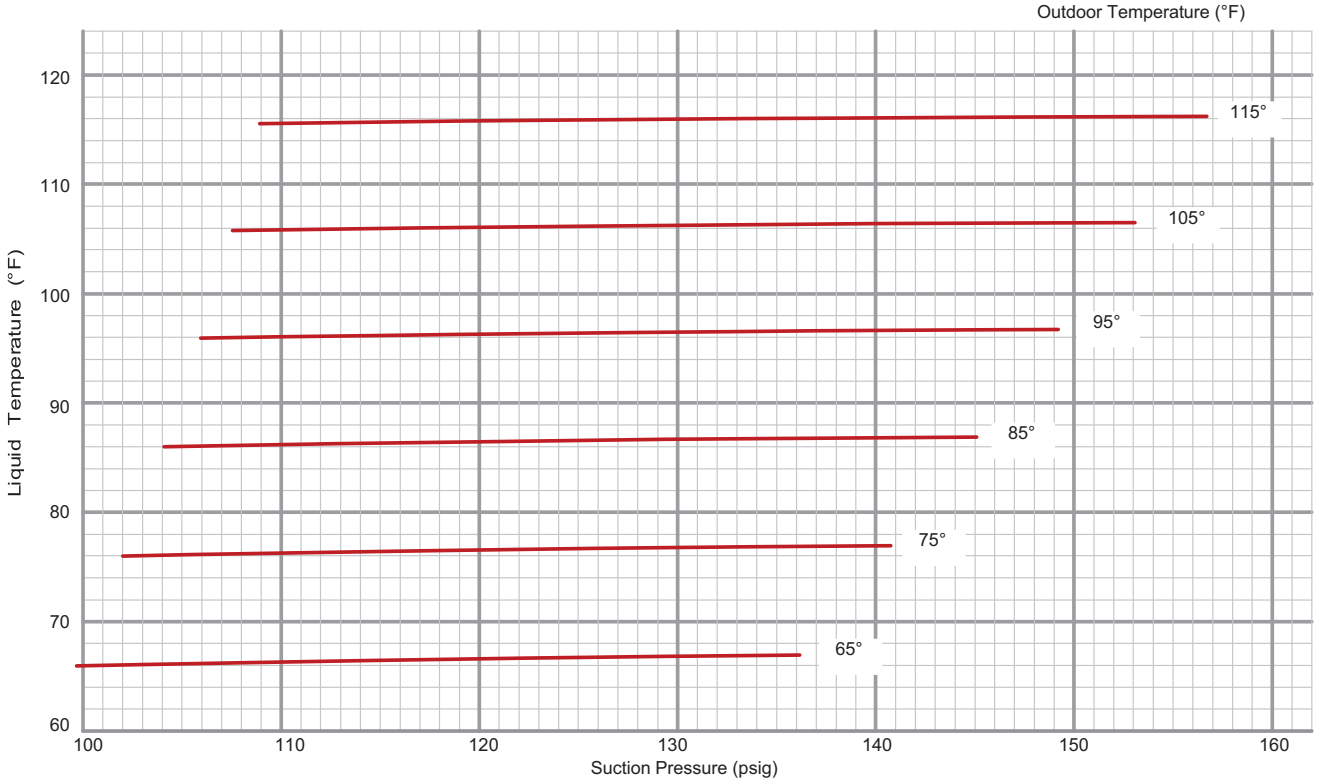


## TABLE 12

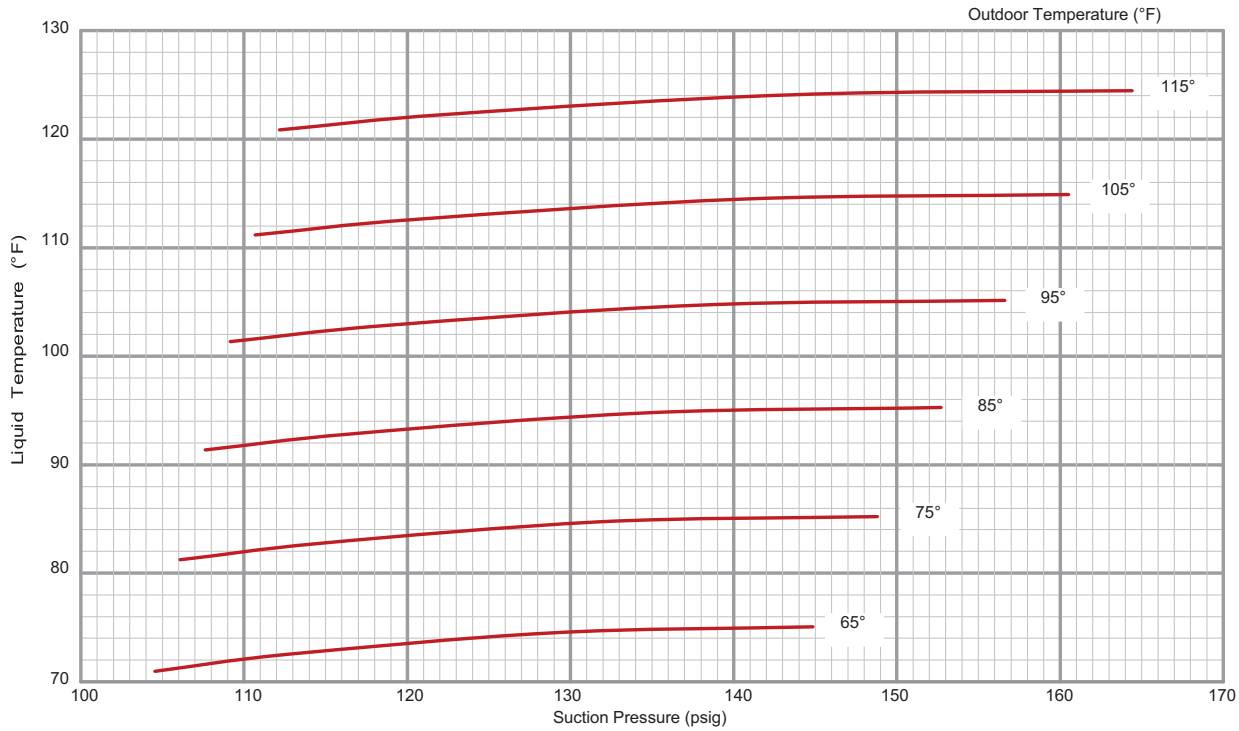
### 180 NORMAL OPERATING PRESSURES - REHEAT - ALL-ALUMINUM COIL - 581087-01

| | 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 | 100 | 237 | 102 | 271 | 104 | 312 | 106 | 357 | 108 | 409 | 109 | 465 |
| | 107 | 239 | 110 | 273 | 113 | 313 | 115 | 359 | 117 | 410 | 119 | 466 |
| | 122 | 245 | 126 | 279 | 129 | 318 | 133 | 363 | 136 | 414 | 138 | 470 |
| | 136 | 254 | 141 | 287 | 145 | 326 | 149 | 371 | 153 | 421 | 157 | 476 |
| Circuit 2 | 105 | 249 | 106 | 288 | 108 | 333 | 109 | 385 | 111 | 444 | 112 | 510 |
| | 113 | 251 | 115 | 288 | 117 | 332 | 119 | 384 | 121 | 442 | 123 | 507 |
| | 129 | 258 | 132 | 293 | 135 | 336 | 138 | 385 | 141 | 441 | 144 | 504 |
| | 145 | 271 | 149 | 305 | 153 | 345 | 157 | 393 | 161 | 447 | 164 | 508 |
| Circuit 3 | 113 | 251 | 115 | 290 | 116 | 333 | 118 | 382 | 120 | 435 | 122 | 494 |
| | 121 | 255 | 124 | 293 | 126 | 336 | 128 | 385 | 130 | 438 | 132 | 496 |
| | 139 | 264 | 141 | 303 | 144 | 346 | 147 | 394 | 150 | 447 | 153 | 504 |
| | 155 | 278 | 159 | 316 | 162 | 359 | 166 | 407 | 169 | 459 | 173 | 517 |

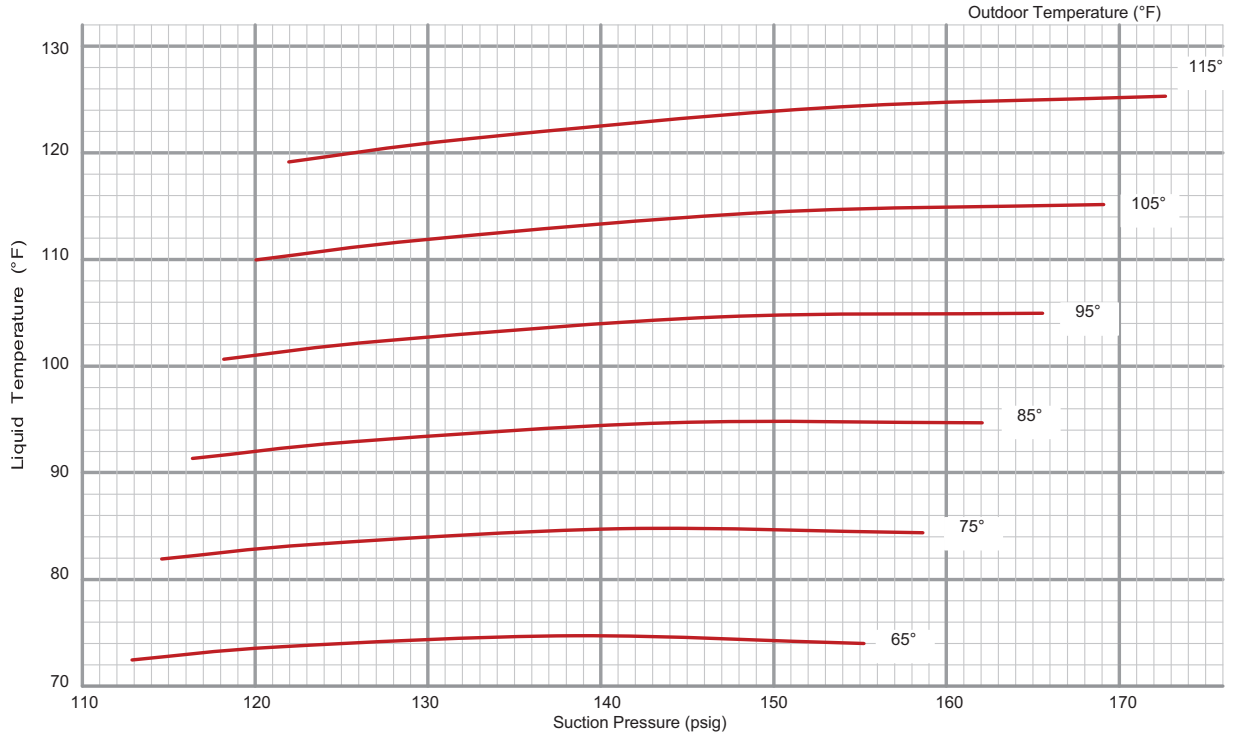
### 180 CHARGING CURVE CIRCUIT 1 - REHEAT - ALL-ALUMINUM COIL - 581088-01



## 180 CHARGING CURVE CIRCUIT 2 - REHEAT - ALL-ALUMINUM COIL - 581088-01




## 180 CHARGING CURVE CIRCUIT 3 - REHEAT - ALL-ALUMINUM COIL - 581088-01

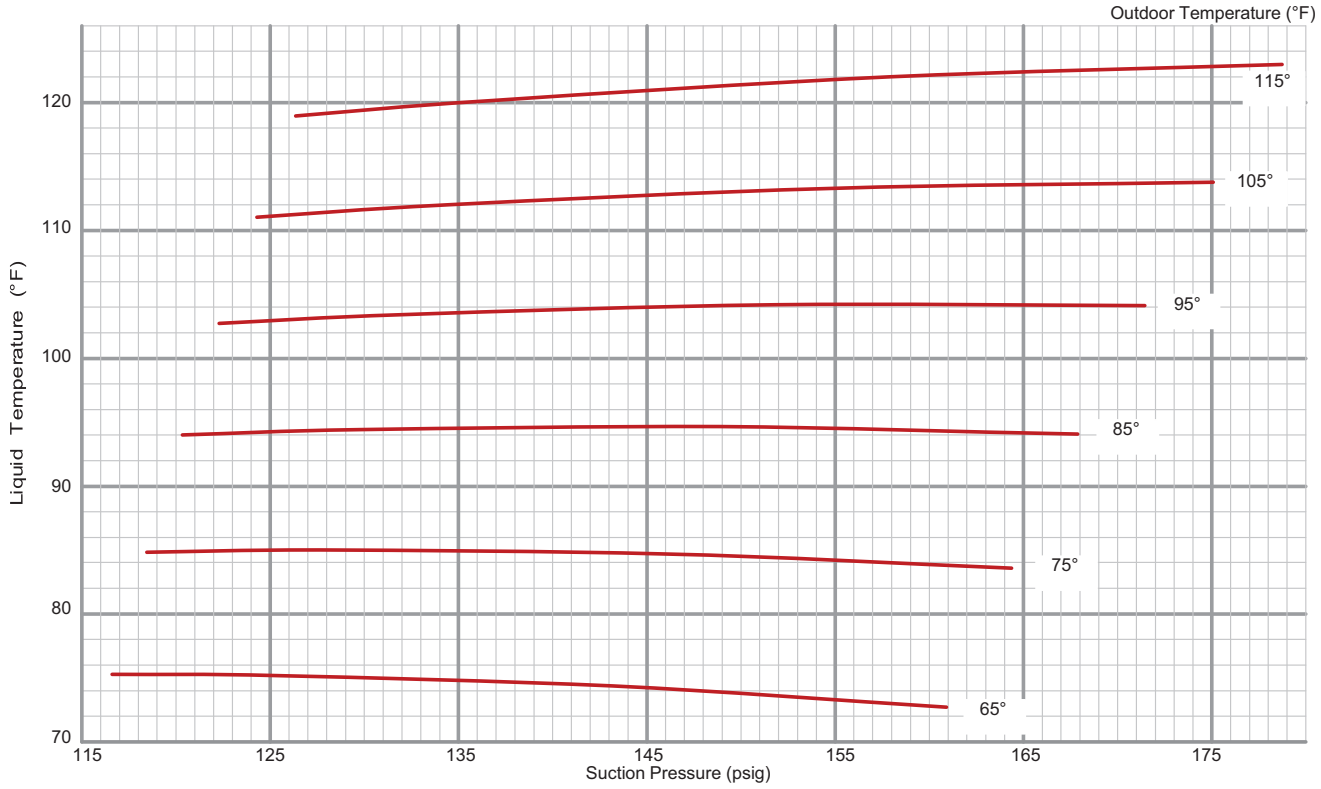


## TABLE 13

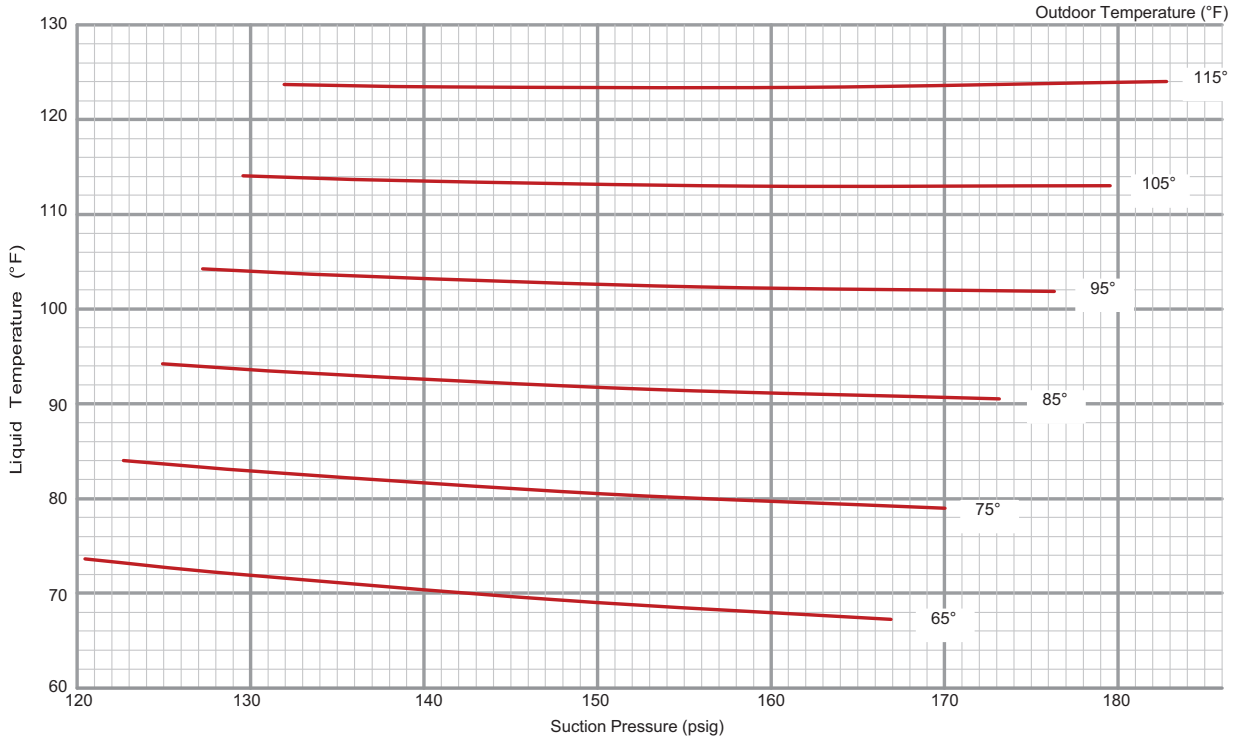
### 210 NORMAL OPERATING PRESSURES - NO REHEAT - ALL-ALUMINUM COIL - 581089-01

| | 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 | 117 | 250 | 118 | 288 | 120 | 330 | 122 | 376 | 124 | 426 | 126 | 480 |
| | 125 | 256 | 128 | 294 | 130 | 336 | 132 | 383 | 134 | 433 | 137 | 487 |
| | 143 | 268 | 146 | 306 | 149 | 349 | 152 | 396 | 155 | 446 | 158 | 501 |
| | 161 | 280 | 164 | 319 | 168 | 362 | 171 | 409 | 175 | 460 | 179 | 515 |
| Circuit 2 | 120 | 243 | 123 | 281 | 125 | 321 | 127 | 365 | 130 | 412 | 132 | 463 |
| | 129 | 249 | 132 | 287 | 134 | 328 | 137 | 372 | 139 | 419 | 142 | 470 |
| | 148 | 262 | 150 | 300 | 153 | 341 | 156 | 385 | 159 | 433 | 162 | 484 |
| | 167 | 276 | 170 | 314 | 173 | 355 | 176 | 400 | 180 | 448 | 183 | 499 |
| Circuit 3 | 104 | 249 | 106 | 290 | 108 | 335 | 110 | 385 | 112 | 438 | 114 | 496 |
| | 112 | 252 | 114 | 293 | 116 | 338 | 119 | 388 | 121 | 441 | 123 | 499 |
| | 129 | 258 | 132 | 299 | 134 | 345 | 137 | 394 | 139 | 447 | 142 | 505 |
| | 147 | 266 | 150 | 307 | 153 | 352 | 156 | 401 | 159 | 455 | 162 | 512 |
| Circuit 4 | 106 | 242 | 108 | 283 | 110 | 329 | 112 | 382 | 114 | 440 | 116 | 505 |
| | 113 | 244 | 116 | 284 | 118 | 330 | 120 | 382 | 123 | 440 | 125 | 504 |
| | 130 | 250 | 133 | 289 | 136 | 334 | 138 | 385 | 141 | 442 | 144 | 504 |
| | 147 | 260 | 150 | 298 | 154 | 341 | 157 | 391 | 161 | 447 | 164 | 508 |

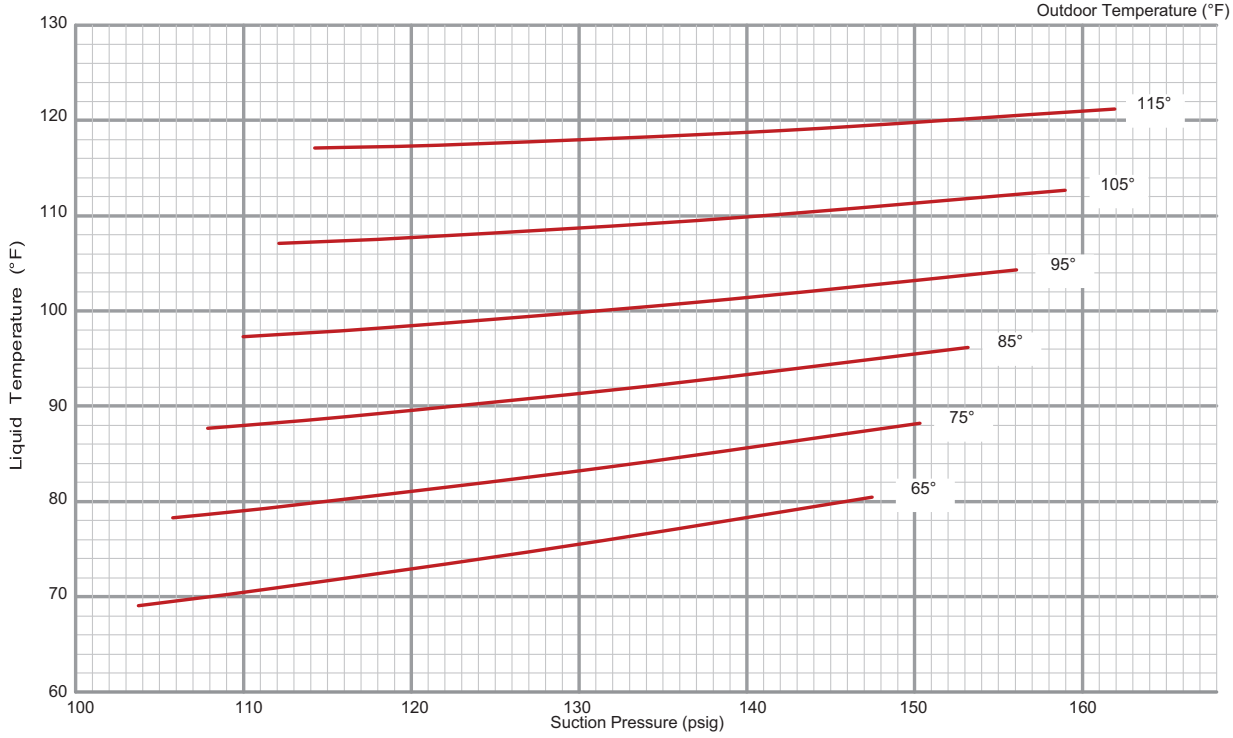
### 210 CHARGING CURVE CIRCUIT 1 - NO REHEAT - ALL-ALUMINUM COIL - 581090-01



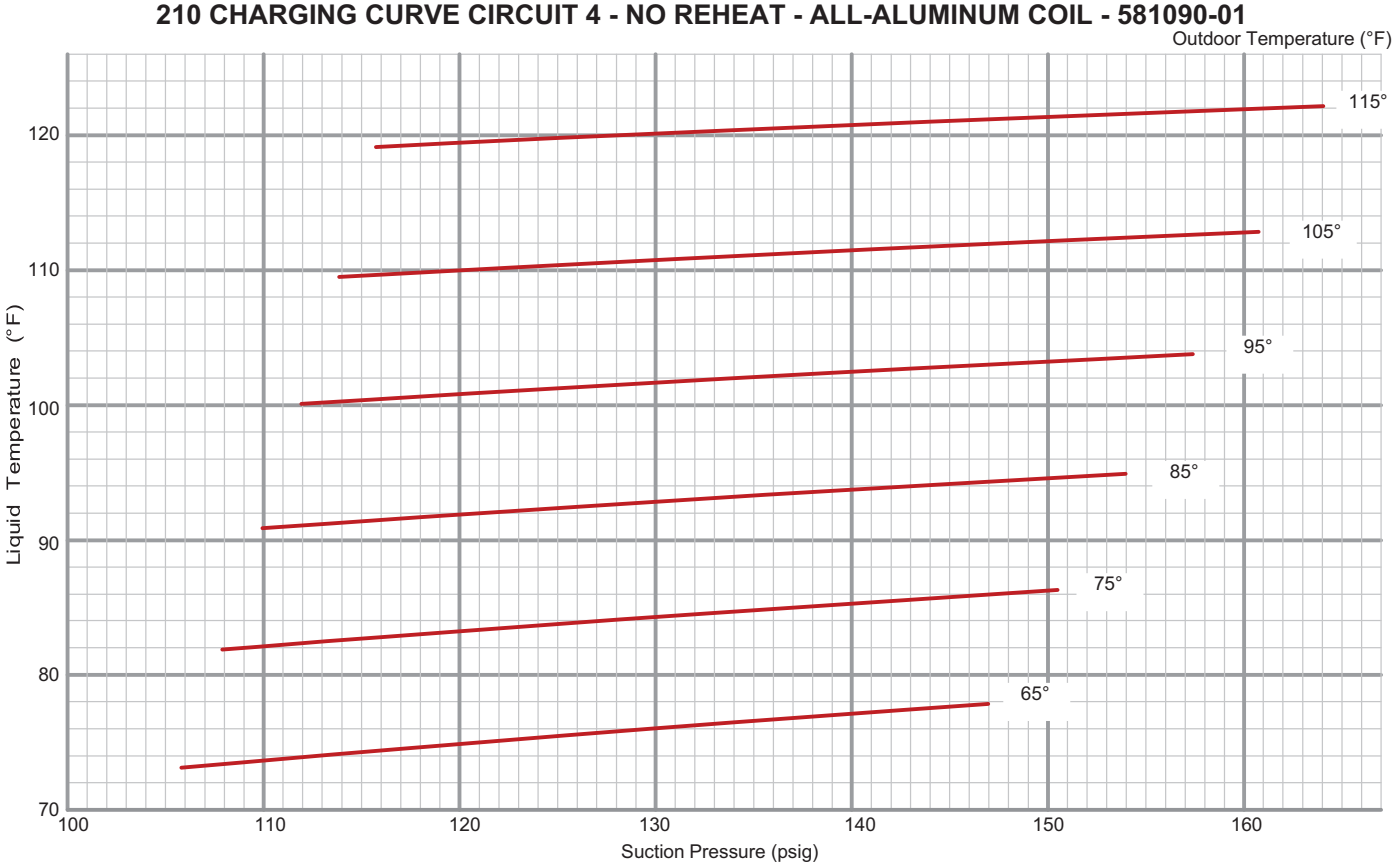
## 210 CHARGING CURVE CIRCUIT 2 - NO REHEAT - ALL-ALUMINUM COIL - 581090-01




## 210 CHARGING CURVE CIRCUIT 3 - NO REHEAT - ALL-ALUMINUM COIL - 581090-01



## 210 CHARGING CURVE CIRCUIT 4 - NO REHEAT - ALL-ALUMINUM COIL - 581090-01

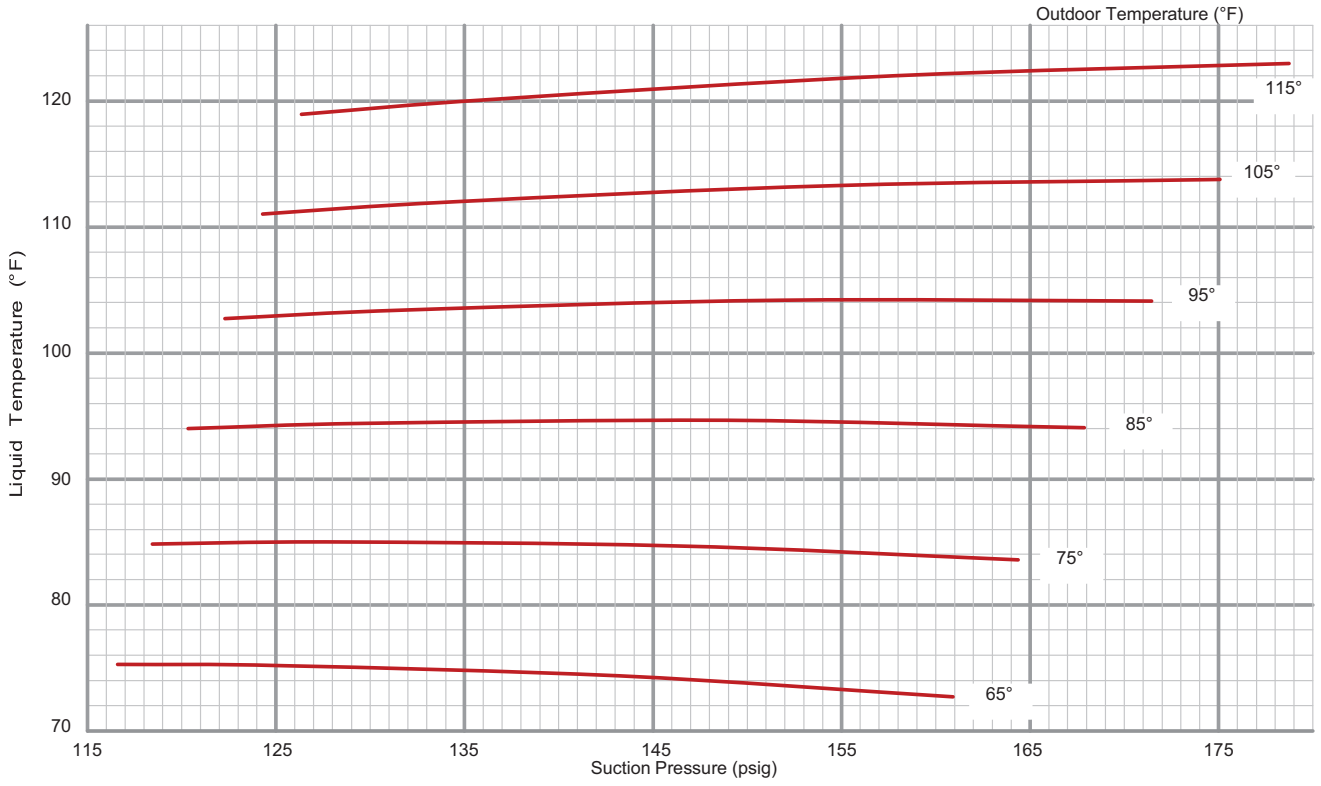


## TABLE 14

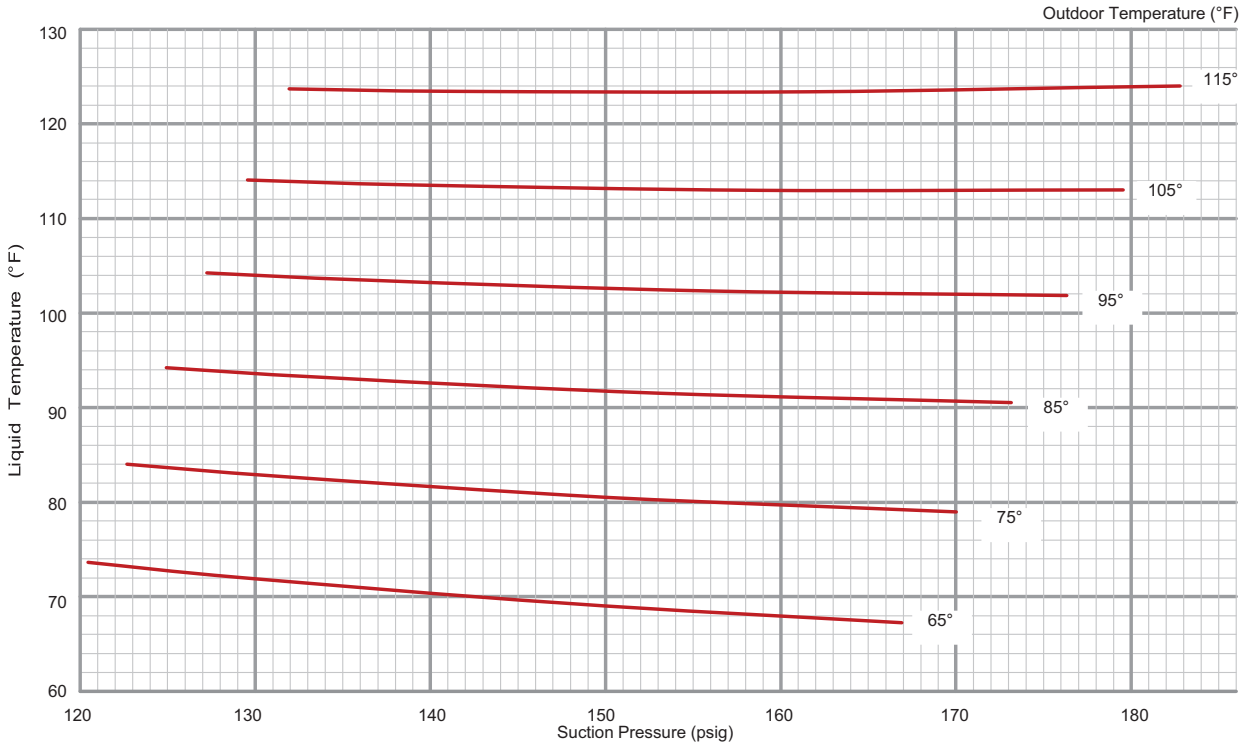
### 210 NORMAL OPERATING PRESSURES - REHEAT - ALL-ALUMINUM COIL - 581091-01

| | 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 | 117 | 250 | 118 | 288 | 120 | 330 | 122 | 376 | 124 | 426 | 126 | 480 |
| | 125 | 256 | 128 | 294 | 130 | 336 | 132 | 383 | 134 | 433 | 137 | 487 |
| | 143 | 268 | 146 | 306 | 149 | 349 | 152 | 396 | 155 | 446 | 158 | 501 |
| | 161 | 280 | 164 | 319 | 168 | 362 | 171 | 409 | 175 | 460 | 179 | 515 |
| Circuit 2 | 120 | 243 | 123 | 281 | 125 | 321 | 127 | 365 | 130 | 412 | 132 | 463 |
| | 129 | 249 | 132 | 287 | 134 | 328 | 137 | 372 | 139 | 419 | 142 | 470 |
| | 148 | 262 | 150 | 300 | 153 | 341 | 156 | 385 | 159 | 433 | 162 | 484 |
| | 167 | 276 | 170 | 314 | 173 | 355 | 176 | 400 | 180 | 448 | 183 | 499 |
| Circuit 3 | 104 | 249 | 106 | 290 | 108 | 335 | 110 | 385 | 112 | 438 | 114 | 496 |
| | 112 | 252 | 114 | 293 | 116 | 338 | 119 | 388 | 121 | 441 | 123 | 499 |
| | 129 | 258 | 132 | 299 | 134 | 345 | 137 | 394 | 139 | 447 | 142 | 505 |
| | 147 | 266 | 150 | 307 | 153 | 352 | 156 | 401 | 159 | 455 | 162 | 512 |
| Circuit 4 | 106 | 242 | 108 | 283 | 110 | 329 | 112 | 382 | 114 | 440 | 116 | 505 |
| | 113 | 244 | 116 | 284 | 118 | 330 | 120 | 382 | 123 | 440 | 125 | 504 |
| | 130 | 250 | 133 | 289 | 136 | 334 | 138 | 385 | 141 | 442 | 144 | 504 |
| | 147 | 260 | 150 | 298 | 154 | 341 | 157 | 391 | 161 | 447 | 164 | 508 |

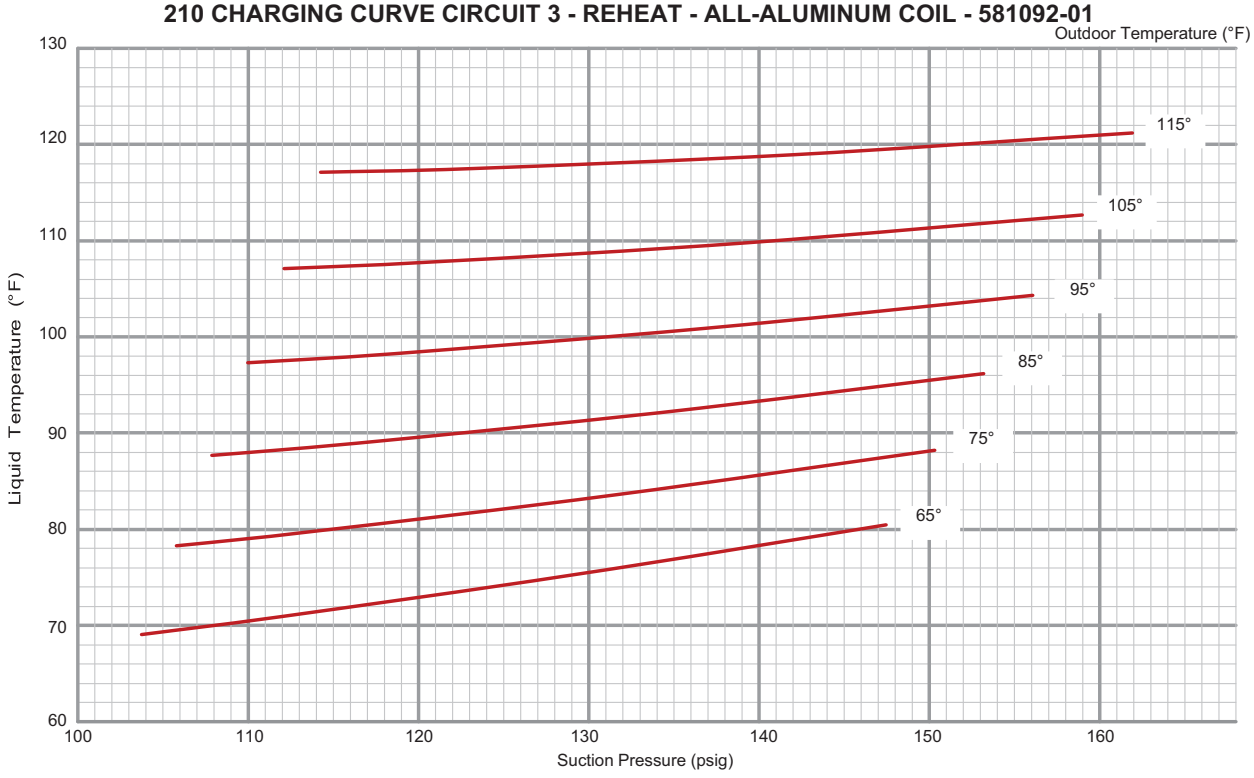
### 210 CHARGING CURVE CIRCUIT 1 - REHEAT - ALL-ALUMINUM COIL - 581092-01



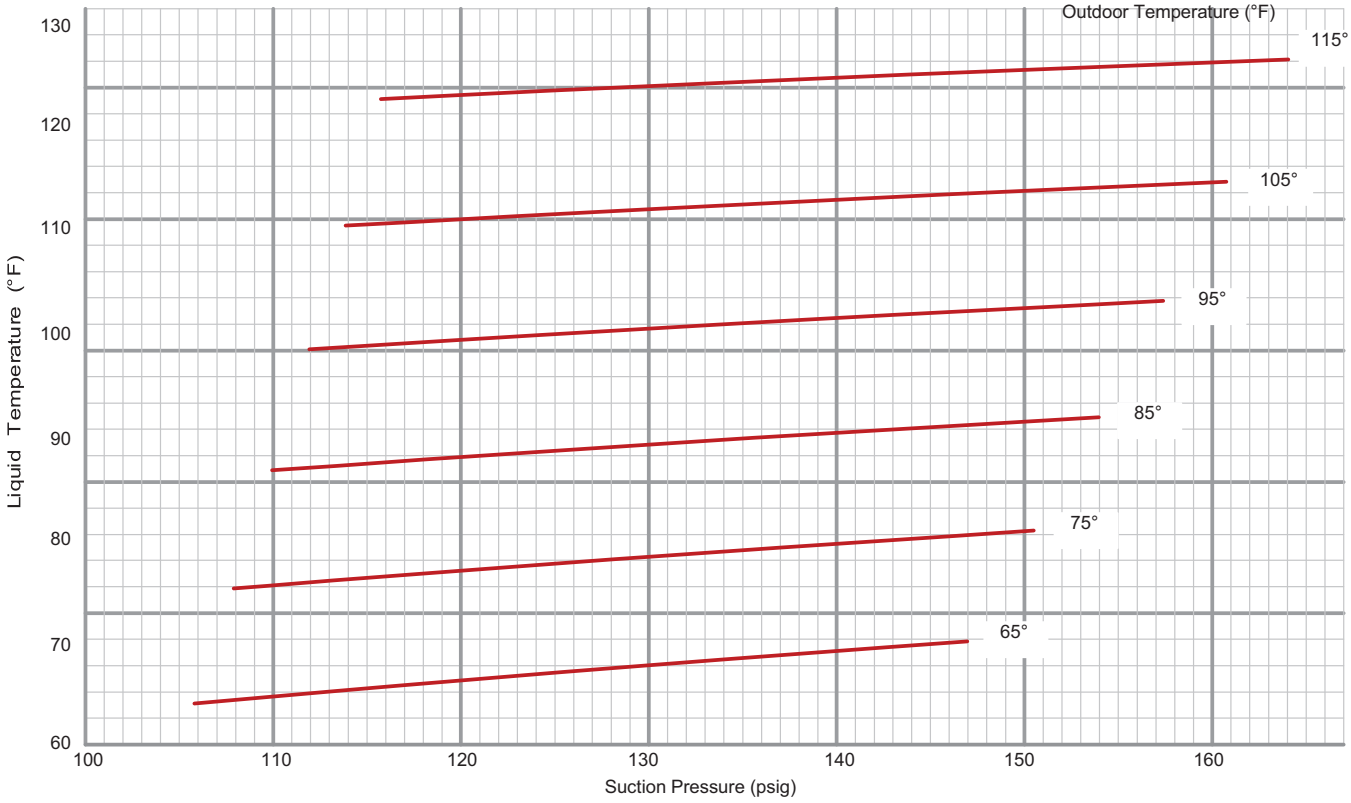
## 210 CHARGING CURVE CIRCUIT 2 - REHEAT - ALL-ALUMINUM COIL - 581092-01




## 210 CHARGING CURVE CIRCUIT 3 - REHEAT - ALL-ALUMINUM COIL - 581092-01



## 210 CHARGING CURVE CIRCUIT 4 - REHEAT - ALL-ALUMINUM COIL - 581092-01

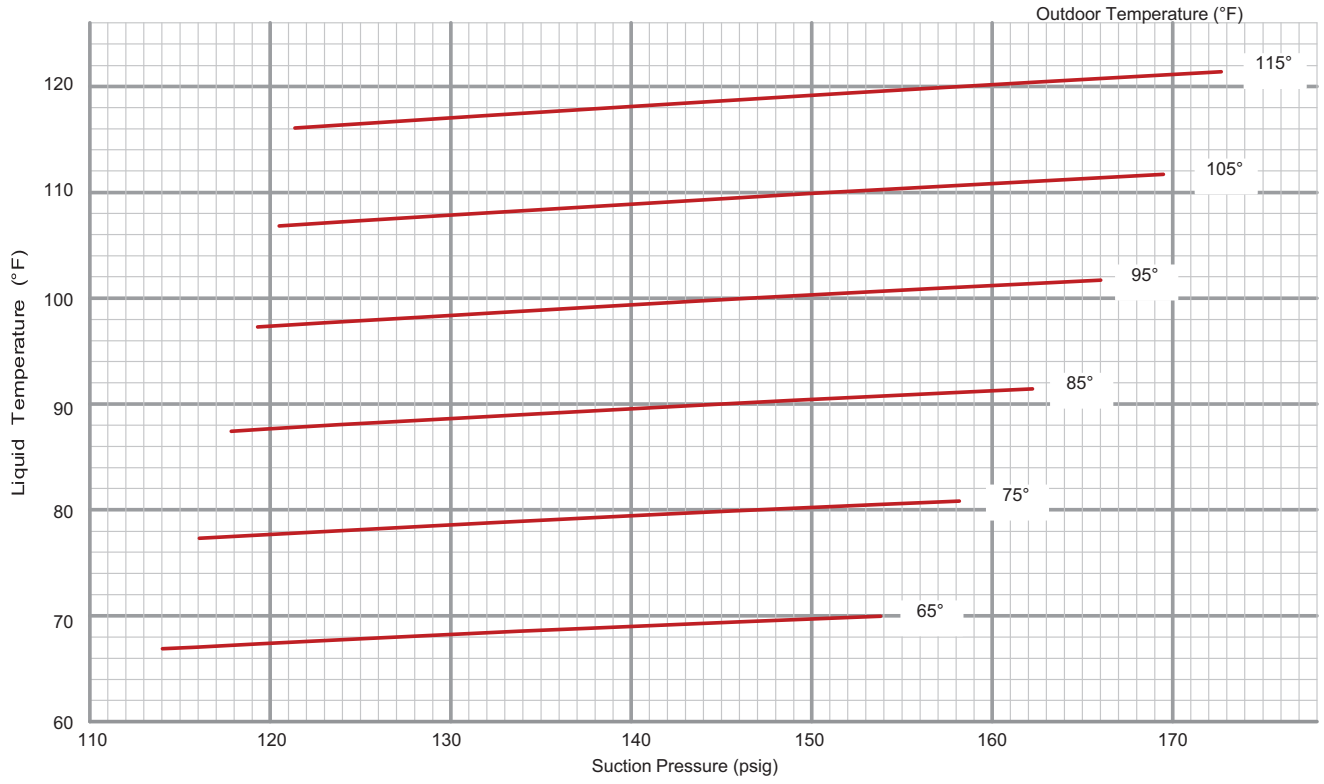


## TABLE 15

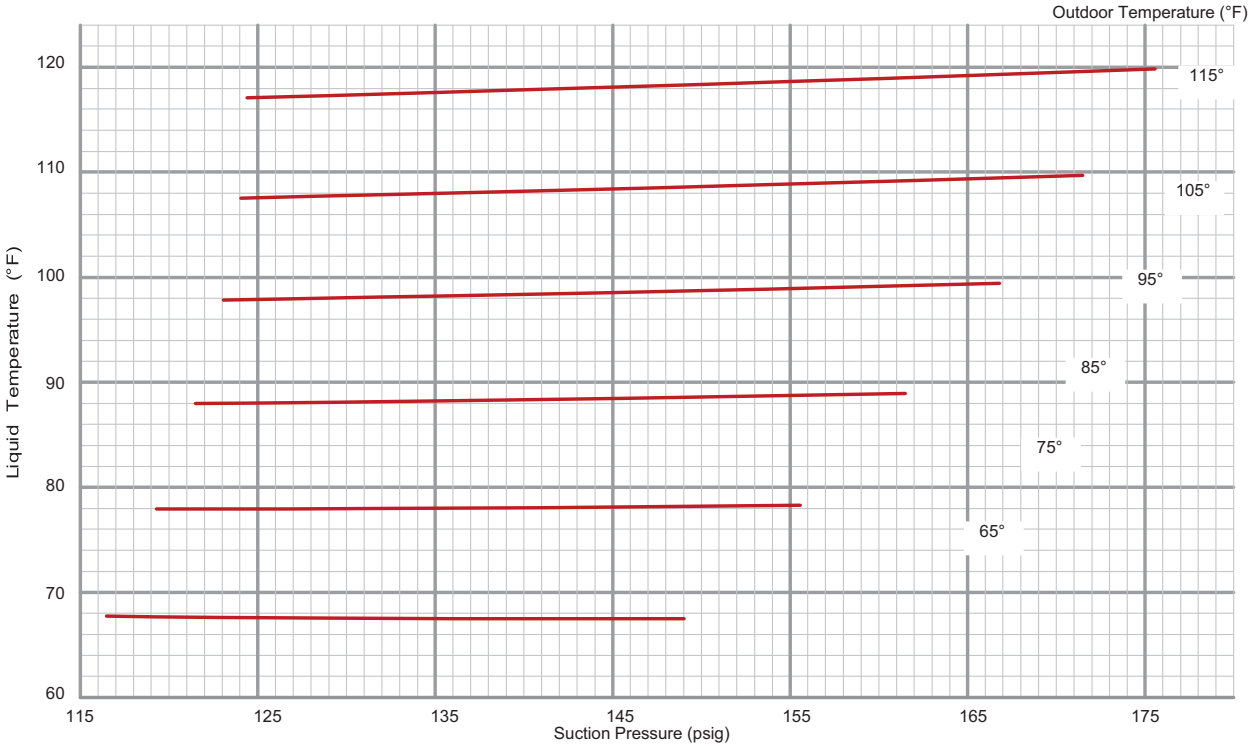
### 240 NORMAL OPERATING PRESSURES - NO REHEAT - ALL-ALUMINUM COIL - 581093-01

| | 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 | 114 | 253 | 116 | 292 | 118 | 337 | 119 | 387 | 120 | 441 | 121 | 501 |
| | 122 | 255 | 125 | 294 | 127 | 339 | 129 | 388 | 130 | 443 | 132 | 503 |
| | 138 | 262 | 141 | 301 | 145 | 345 | 147 | 394 | 150 | 448 | 152 | 507 |
| | 154 | 271 | 158 | 310 | 162 | 353 | 166 | 402 | 169 | 456 | 173 | 515 |
| Circuit 2 | 116 | 240 | 119 | 279 | 121 | 324 | 123 | 374 | 124 | 429 | 124 | 490 |
| | 123 | 243 | 127 | 281 | 129 | 326 | 132 | 375 | 134 | 430 | 135 | 490 |
| | 136 | 250 | 141 | 288 | 145 | 331 | 149 | 379 | 152 | 433 | 155 | 493 |
| | 149 | 259 | 156 | 296 | 161 | 339 | 167 | 386 | 171 | 439 | 176 | 498 |
| Circuit 3 | 101 | 250 | 103 | 290 | 105 | 335 | 107 | 385 | 109 | 439 | 111 | 498 |
| | 108 | 252 | 111 | 292 | 113 | 337 | 116 | 387 | 118 | 441 | 120 | 499 |
| | 124 | 257 | 127 | 298 | 130 | 343 | 133 | 392 | 135 | 446 | 138 | 504 |
| | 141 | 266 | 144 | 306 | 148 | 350 | 151 | 399 | 154 | 453 | 157 | 512 |
| Circuit 4 | 101 | 247 | 104 | 289 | 105 | 336 | 107 | 390 | 109 | 449 | 111 | 514 |
| | 109 | 249 | 111 | 290 | 114 | 336 | 116 | 389 | 118 | 447 | 120 | 511 |
| | 125 | 255 | 128 | 294 | 131 | 339 | 134 | 390 | 137 | 447 | 139 | 509 |
| | 141 | 264 | 145 | 301 | 149 | 345 | 153 | 394 | 156 | 449 | 160 | 510 |

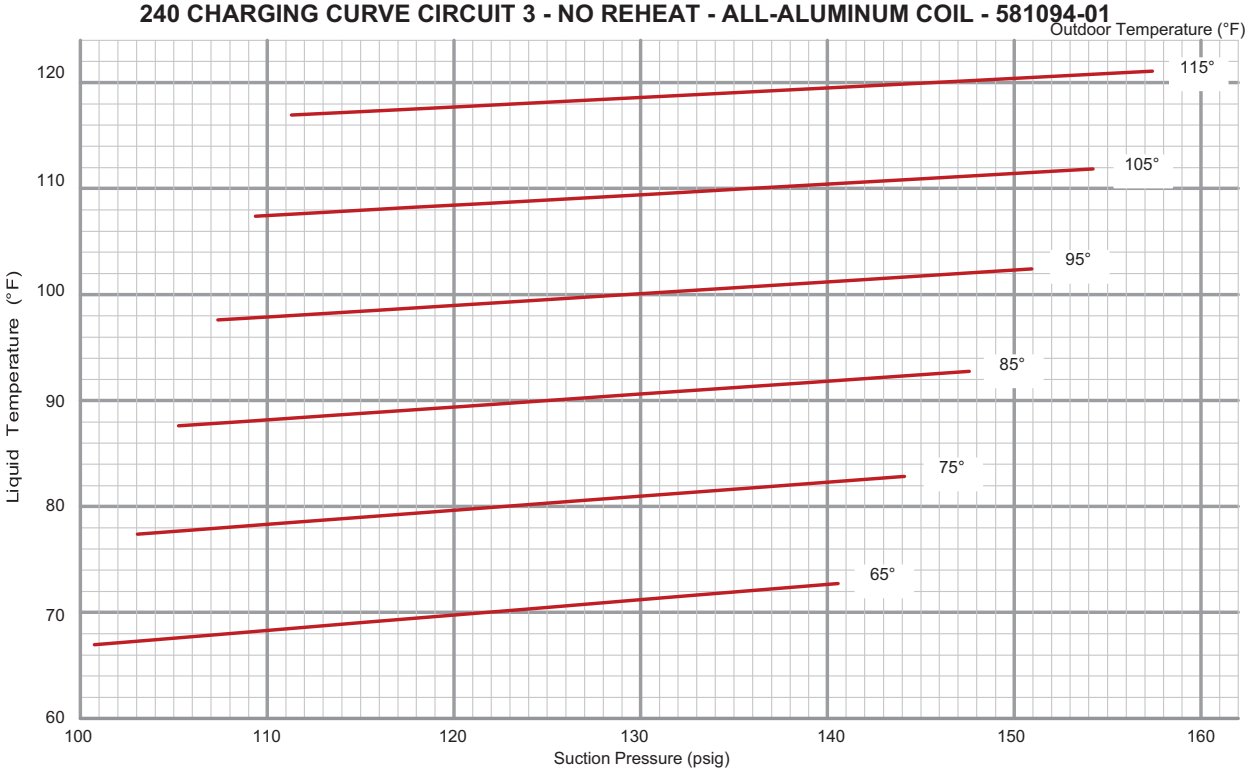
### 240 CHARGING CURVE CIRCUIT 1 - NO REHEAT - ALL-ALUMINUM COIL - 581094-01



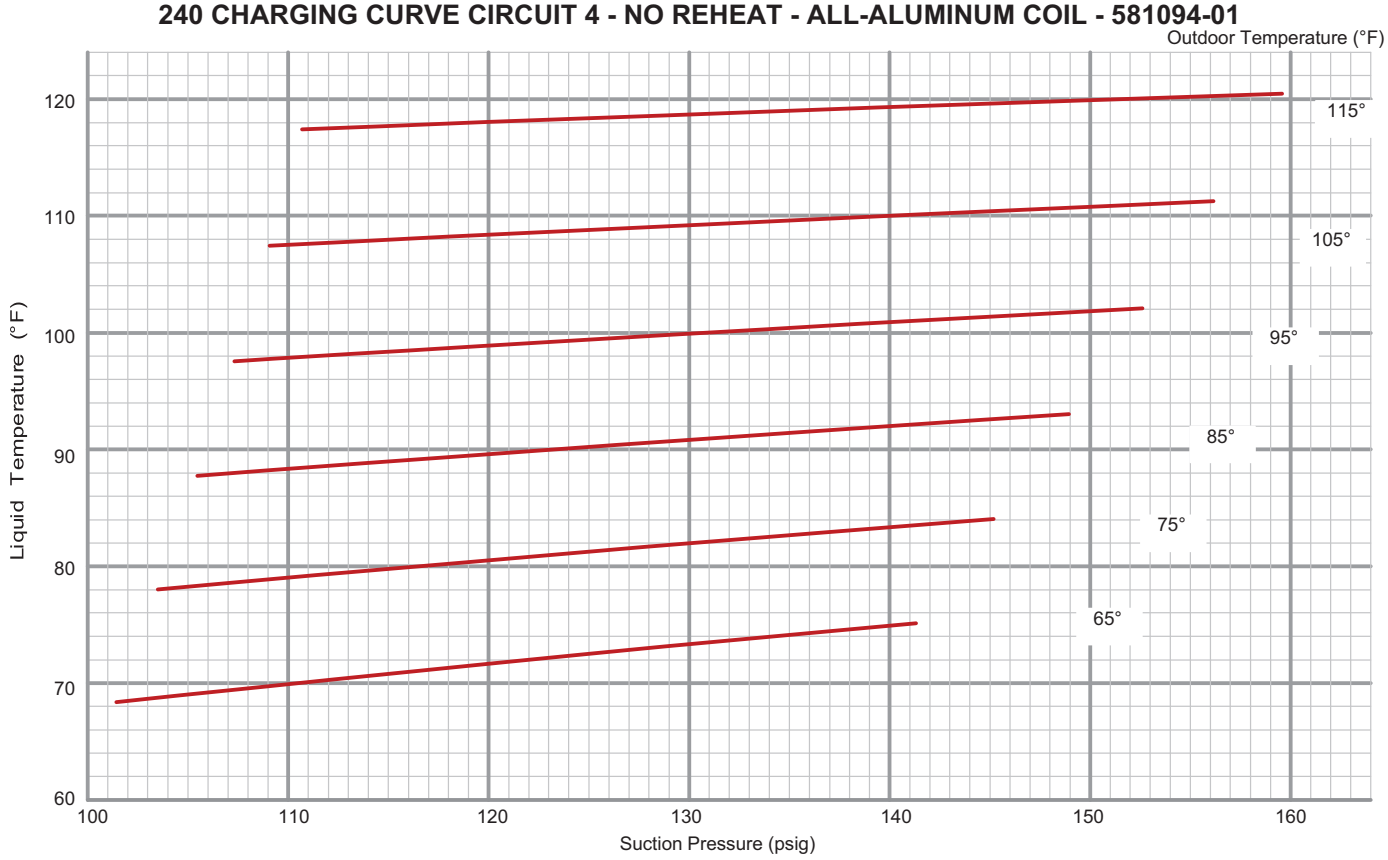
## 240 CHARGING CURVE CIRCUIT 2 - NO REHEAT - ALL-ALUMINUM COIL - 581094-01




## 240 CHARGING CURVE CIRCUIT 3 - NO REHEAT - ALL-ALUMINUM COIL - 581094-01



## 240 CHARGING CURVE CIRCUIT 4 - NO REHEAT - ALL-ALUMINUM COIL - 581094-01

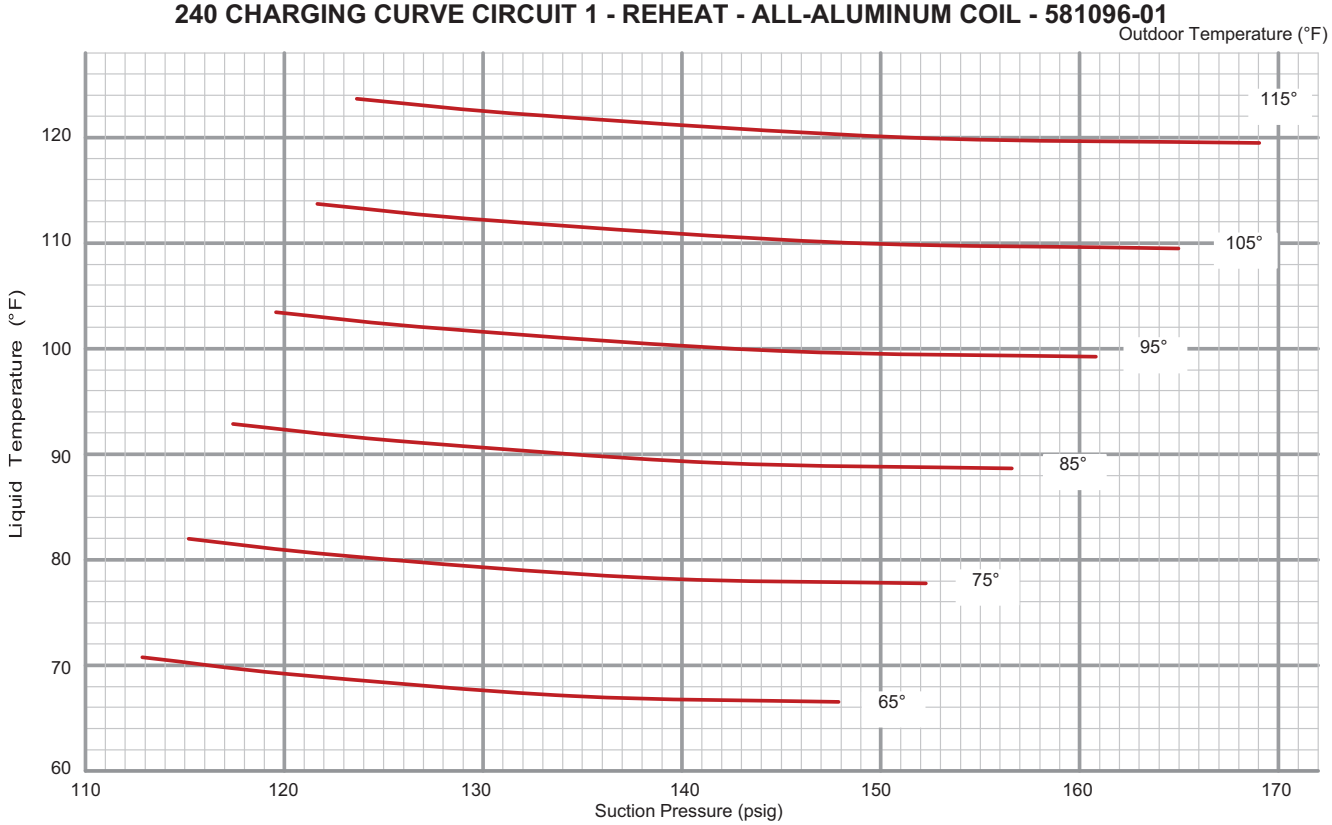


## TABLE 16

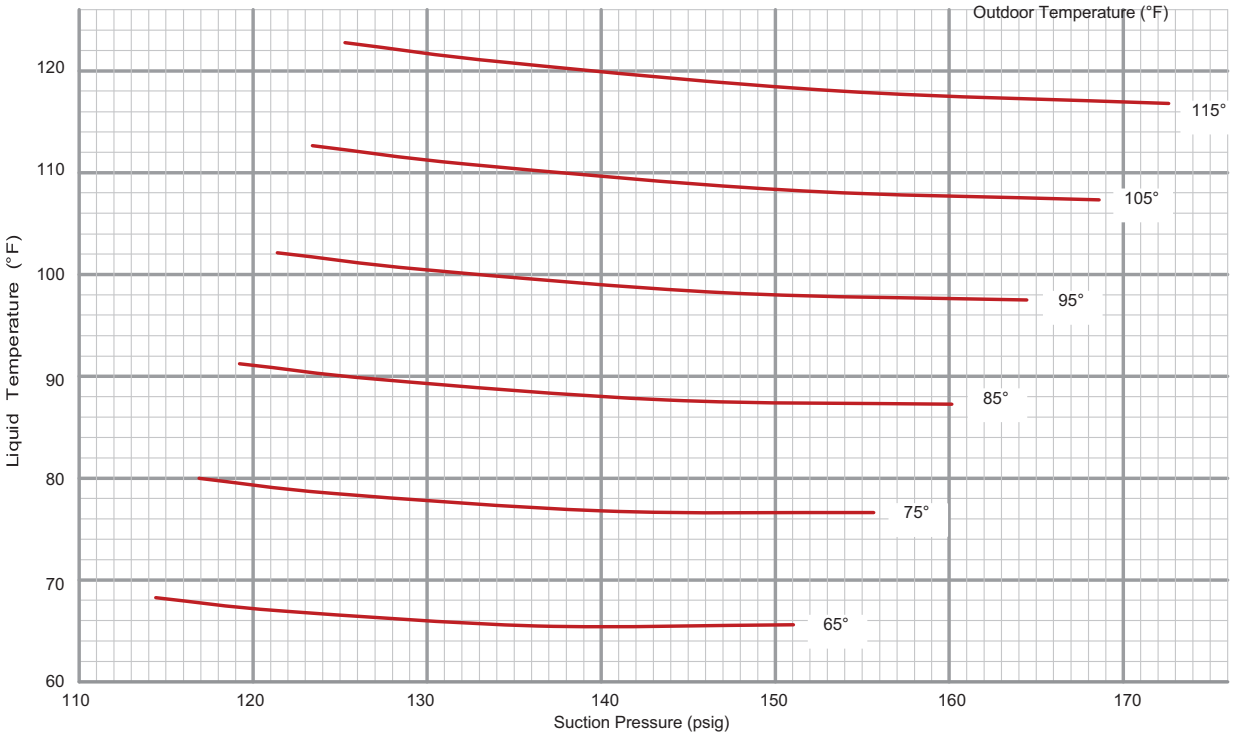
### 240 NORMAL OPERATING PRESSURES - REHEAT - ALL-ALUMINUM COIL - 581095-01

| | 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 | 113 | 247 | 115 | 281 | 117 | 320 | 120 | 363 | 122 | 411 | 124 | 463 |
| | 120 | 253 | 123 | 288 | 126 | 327 | 128 | 371 | 131 | 419 | 133 | 472 |
| | 134 | 265 | 138 | 301 | 142 | 341 | 145 | 386 | 148 | 435 | 151 | 488 |
| | 148 | 276 | 152 | 312 | 157 | 353 | 161 | 399 | 165 | 448 | 169 | 503 |
| Circuit 2 | 114 | 239 | 117 | 272 | 119 | 309 | 121 | 352 | 123 | 401 | 125 | 454 |
| | 122 | 249 | 125 | 281 | 127 | 319 | 130 | 362 | 132 | 410 | 135 | 464 |
| | 136 | 266 | 140 | 299 | 144 | 337 | 147 | 380 | 150 | 429 | 154 | 482 |
| | 151 | 284 | 156 | 316 | 160 | 355 | 164 | 398 | 169 | 447 | 173 | 501 |
| Circuit 3 | 99 | 241 | 102 | 281 | 104 | 325 | 106 | 373 | 108 | 426 | 109 | 483 |
| | 106 | 244 | 109 | 284 | 112 | 328 | 114 | 376 | 116 | 429 | 118 | 487 |
| | 121 | 252 | 125 | 291 | 128 | 335 | 131 | 383 | 133 | 436 | 136 | 493 |
| | 137 | 259 | 141 | 299 | 145 | 343 | 149 | 391 | 152 | 444 | 155 | 501 |
| Circuit 4 | 102 | 239 | 105 | 279 | 107 | 325 | 108 | 377 | 110 | 435 | 110 | 499 |
| | 109 | 241 | 112 | 281 | 115 | 326 | 117 | 378 | 118 | 435 | 120 | 498 |
| | 123 | 248 | 127 | 286 | 131 | 331 | 134 | 381 | 137 | 437 | 139 | 500 |
| | 138 | 257 | 143 | 294 | 148 | 338 | 152 | 387 | 156 | 442 | 159 | 503 |

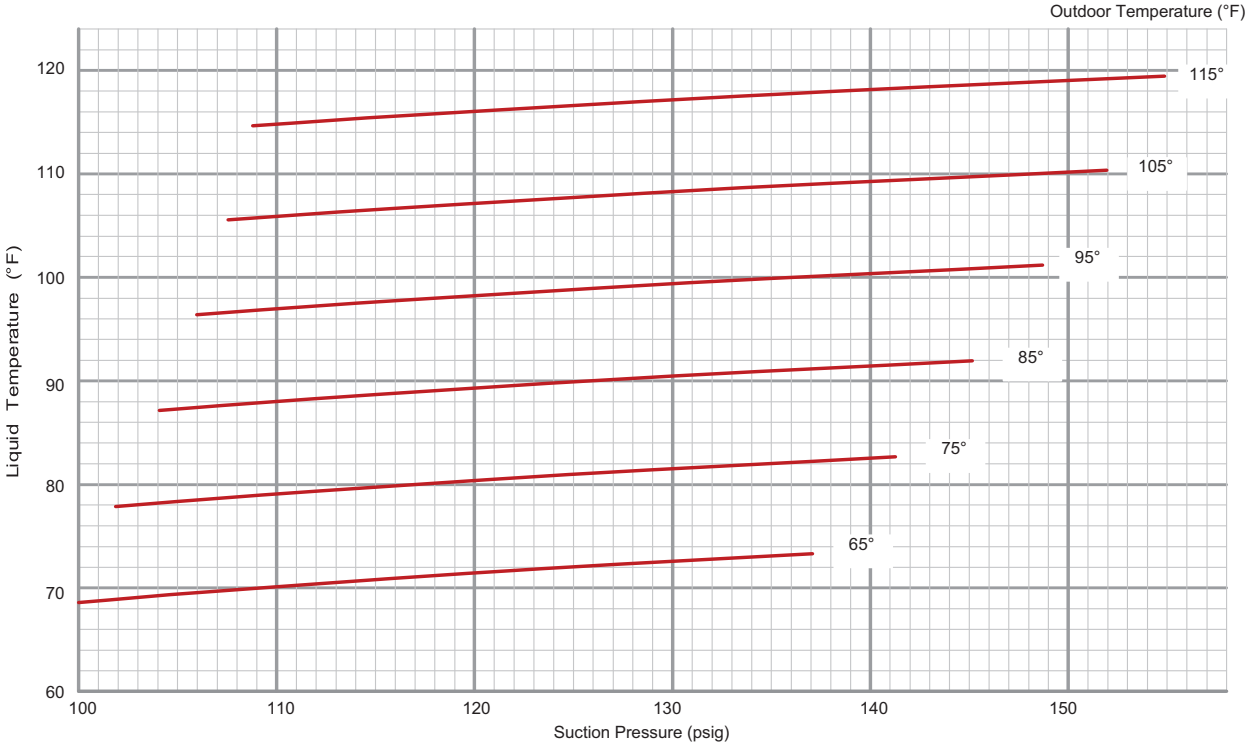
### 240 CHARGING CURVE CIRCUIT 1 - REHEAT - ALL-ALUMINUM COIL - 581096-01



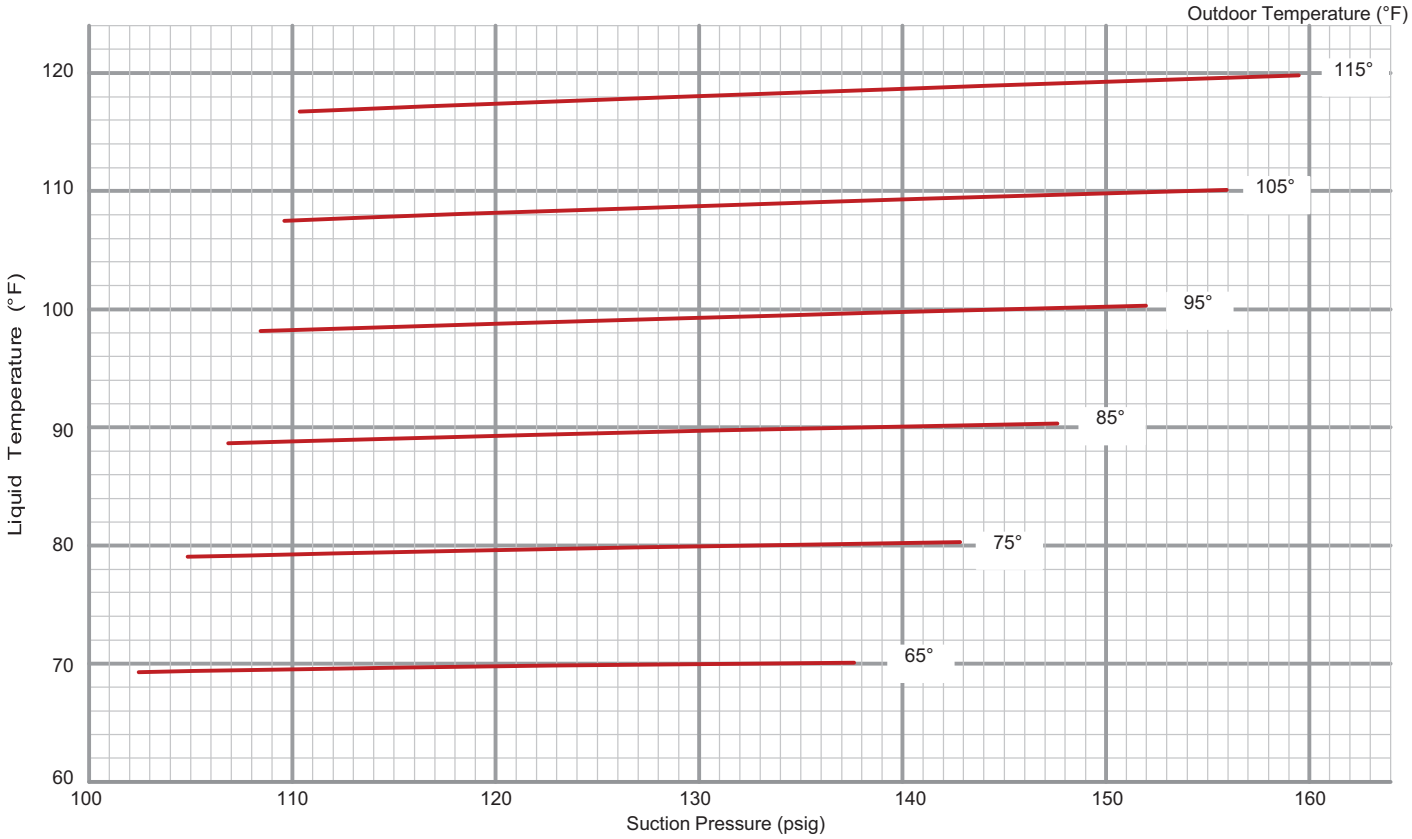
## 240 CHARGING CURVE CIRCUIT 2 - REHEAT - ALL-ALUMINUM COIL - 581096-01




## 240 CHARGING CURVE CIRCUIT 3 - REHEAT - ALL-ALUMINUM COIL - 581096-01



## 240 CHARGING CURVE CIRCUIT 4 - REHEAT - ALL-ALUMINUM COIL - 581096-01

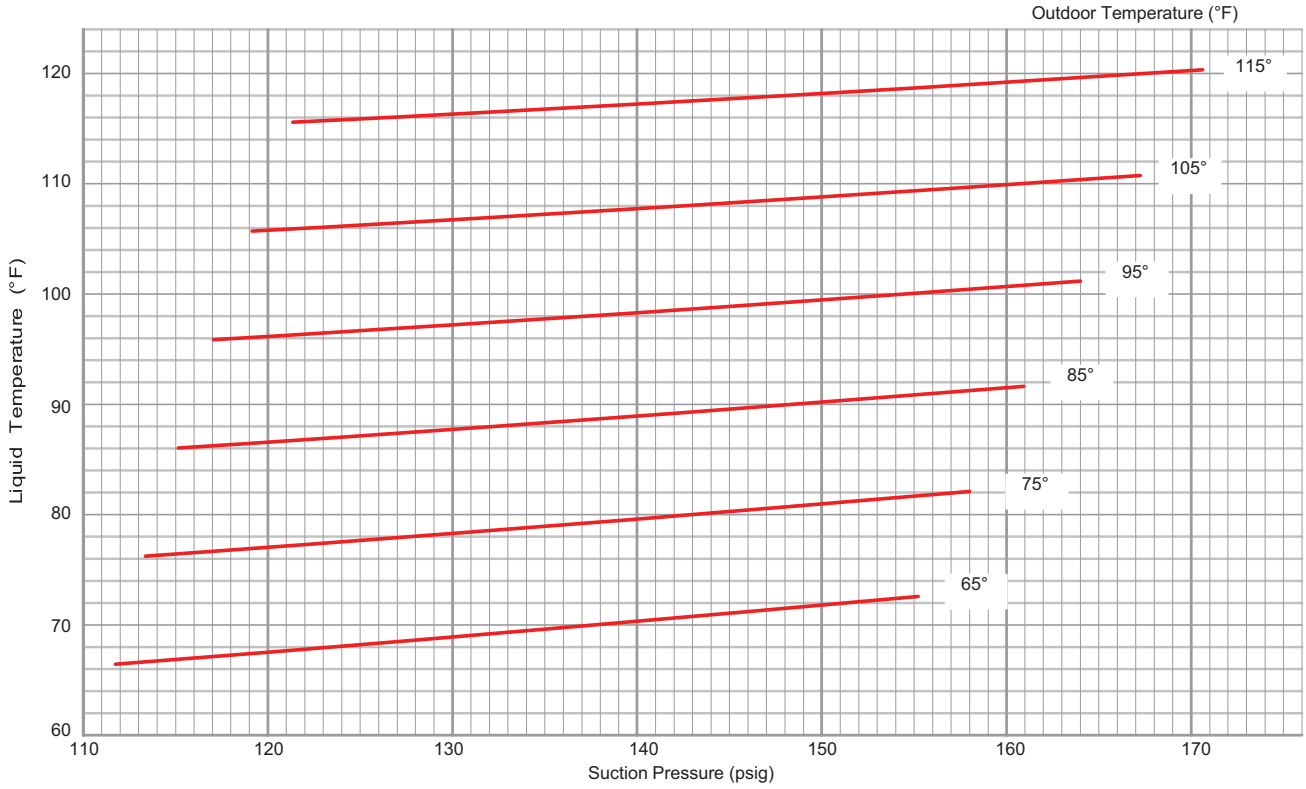


## TABLE 17

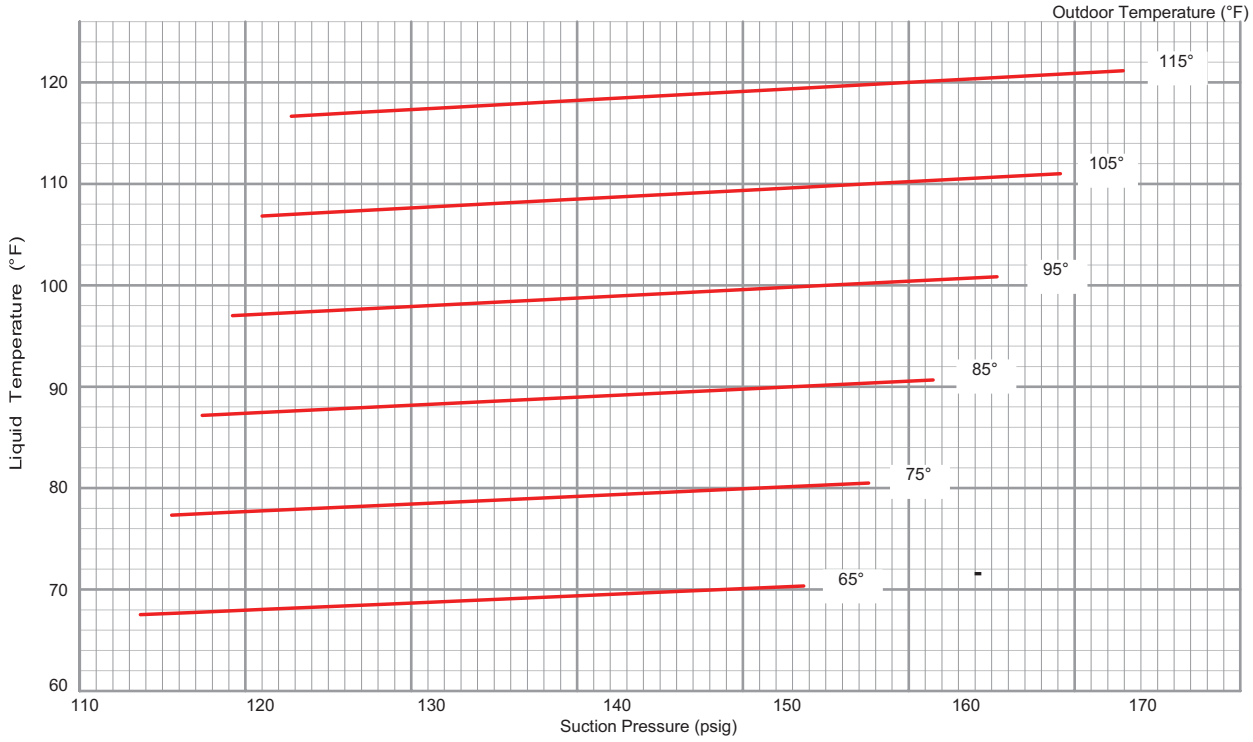
### 300 NORMAL OPERATING PRESSURES - NO REHEAT - ALL-ALUMINUM COIL - 581097-01

| | 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 | 112 | 260 | 113 | 302 | 115 | 349 | 117 | 401 | 119 | 459 | 121 | 523 |
| | 120 | 264 | 122 | 305 | 124 | 352 | 126 | 404 | 128 | 462 | 131 | 525 |
| | 137 | 273 | 140 | 313 | 142 | 359 | 145 | 410 | 147 | 467 | 150 | 529 |
| | 155 | 283 | 158 | 322 | 161 | 367 | 164 | 417 | 167 | 473 | 171 | 535 |
| Circuit 2 | 114 | 245 | 116 | 285 | 117 | 329 | 119 | 379 | 121 | 434 | 123 | 494 |
| | 121 | 249 | 124 | 289 | 126 | 333 | 128 | 383 | 130 | 438 | 133 | 497 |
| | 137 | 257 | 140 | 297 | 144 | 341 | 147 | 390 | 150 | 445 | 153 | 505 |
| | 154 | 265 | 158 | 304 | 161 | 348 | 165 | 397 | 169 | 451 | 173 | 511 |
| Circuit 3 | 95 | 259 | 97 | 300 | 99 | 346 | 102 | 398 | 104 | 454 | 107 | 515 |
| | 102 | 264 | 105 | 306 | 107 | 352 | 110 | 403 | 113 | 459 | 115 | 520 |
| | 118 | 274 | 121 | 315 | 124 | 362 | 127 | 413 | 130 | 469 | 134 | 530 |
| | 135 | 282 | 138 | 323 | 142 | 370 | 146 | 421 | 149 | 478 | 153 | 539 |
| Circuit 4 | 98 | 251 | 100 | 294 | 102 | 341 | 104 | 393 | 106 | 450 | 108 | 511 |
| | 105 | 259 | 107 | 301 | 110 | 347 | 112 | 399 | 115 | 456 | 117 | 517 |
| | 121 | 269 | 124 | 310 | 127 | 357 | 130 | 408 | 133 | 464 | 136 | 524 |
| | 137 | 274 | 141 | 315 | 145 | 360 | 148 | 411 | 152 | 466 | 156 | 526 |

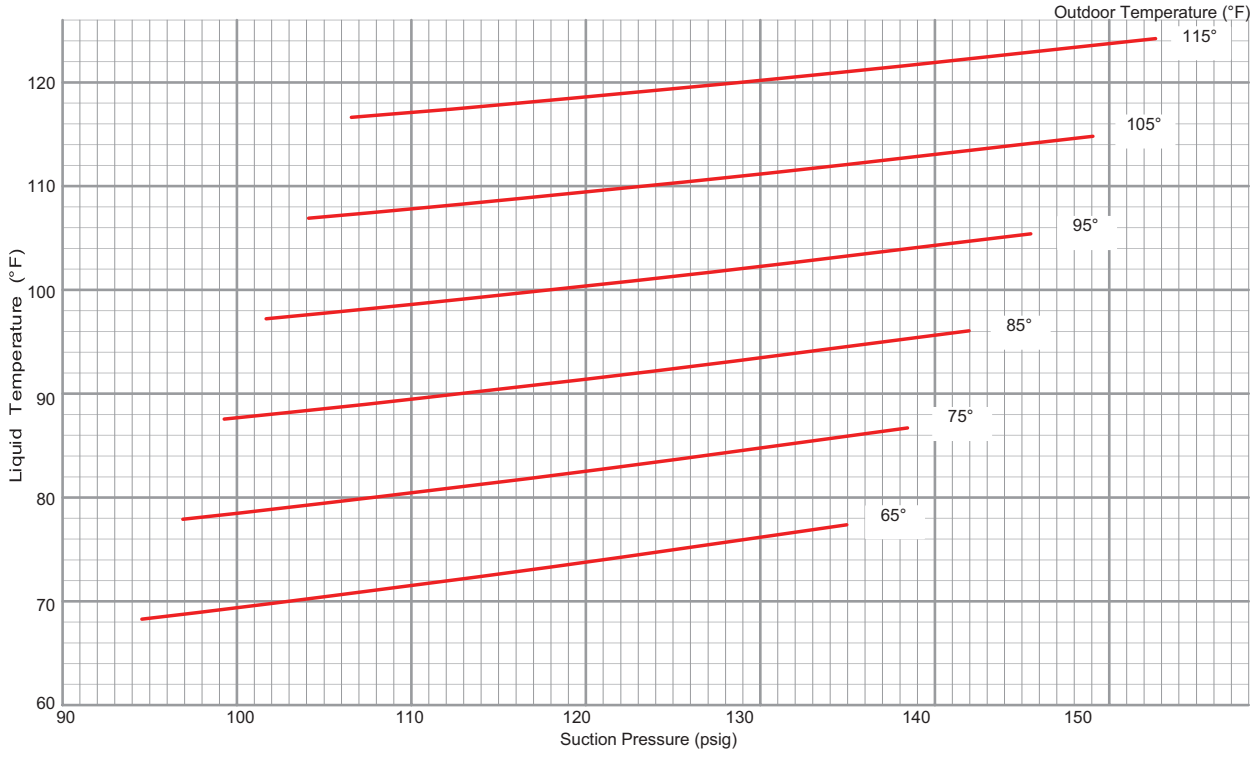
### 300 CHARGING CURVE CIRCUIT 1 - NO REHEAT - ALL-ALUMINUM COIL - 581098-01



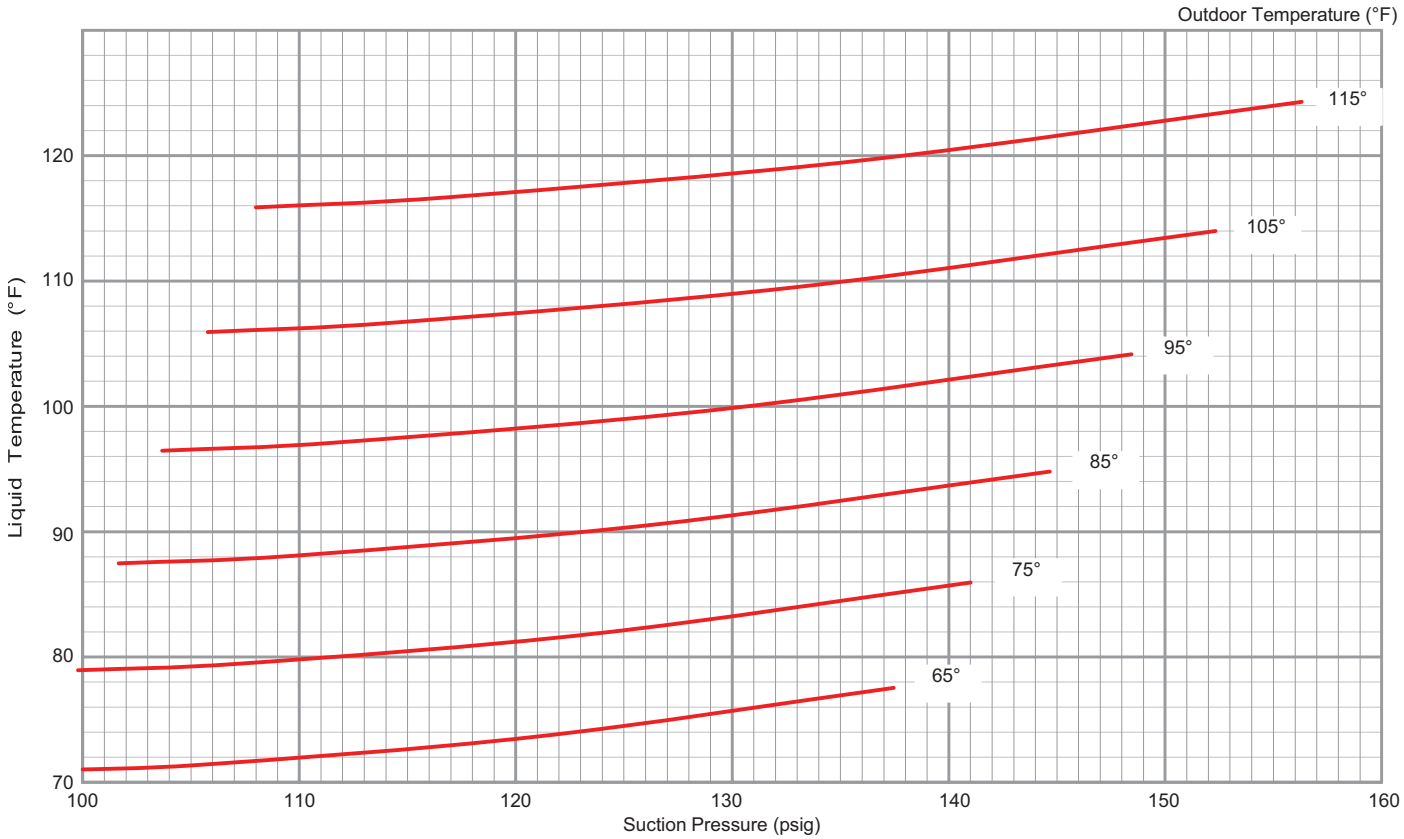
## 300 CHARGING CURVE CIRCUIT 2 - NO REHEAT - ALL-ALUMINUM COIL - 581098-01




## 300 CHARGING CURVE CIRCUIT 3 - NO REHEAT - ALL-ALUMINUM COIL - 581098-01



## 300 CHARGING CURVE CIRCUIT 4 - NO REHEAT - ALL-ALUMINUM COIL - 581098-01

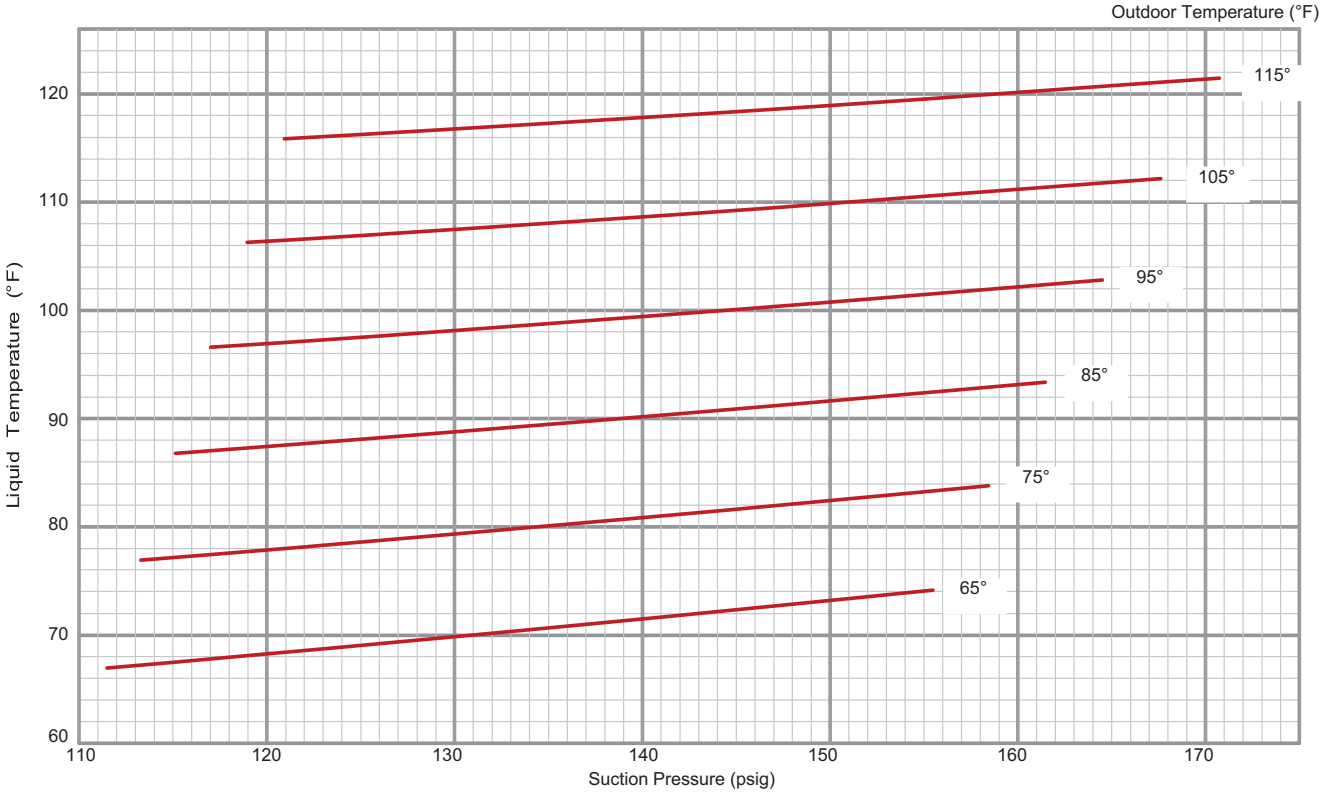


## TABLE 18

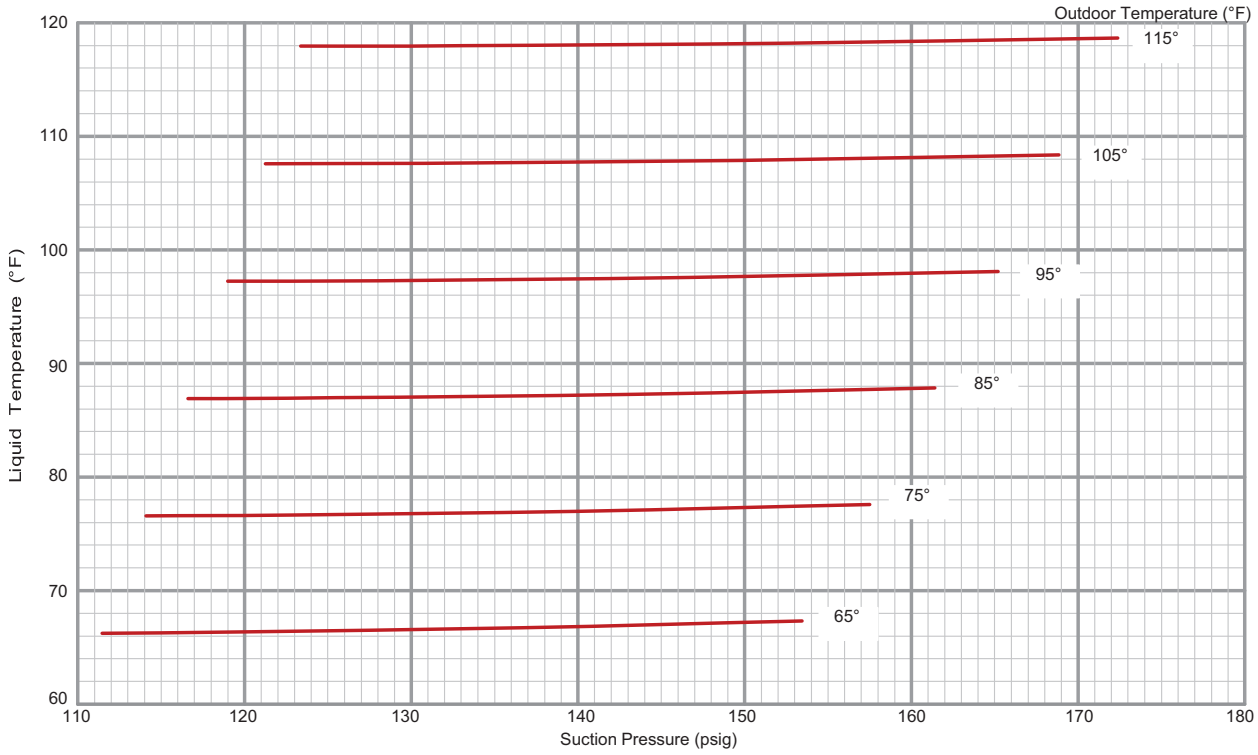
### 300 NORMAL OPERATING PRESSURES - REHEAT - ALL-ALUMINUM COIL - 581099-01

| | 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 | 111 | 270 | 113 | 310 | 115 | 355 | 117 | 405 | 119 | 461 | 121 | 522 |
| | 120 | 274 | 122 | 314 | 124 | 358 | 126 | 408 | 128 | 463 | 130 | 524 |
| | 137 | 285 | 140 | 323 | 142 | 367 | 145 | 416 | 147 | 470 | 150 | 529 |
| | 155 | 298 | 158 | 335 | 161 | 378 | 165 | 425 | 168 | 478 | 171 | 537 |
| Circuit 2 | 111 | 260 | 114 | 297 | 117 | 340 | 119 | 389 | 121 | 443 | 123 | 502 |
| | 120 | 268 | 123 | 306 | 126 | 349 | 128 | 398 | 131 | 452 | 133 | 512 |
| | 137 | 280 | 140 | 319 | 143 | 363 | 147 | 413 | 150 | 468 | 153 | 529 |
| | 153 | 287 | 158 | 326 | 161 | 372 | 165 | 422 | 169 | 479 | 172 | 540 |
| Circuit 3 | 95 | 263 | 97 | 304 | 100 | 350 | 102 | 401 | 104 | 458 | 106 | 519 |
| | 102 | 266 | 105 | 307 | 108 | 353 | 110 | 405 | 112 | 461 | 115 | 522 |
| | 118 | 274 | 122 | 315 | 125 | 361 | 128 | 412 | 130 | 468 | 133 | 529 |
| | 136 | 284 | 140 | 324 | 143 | 370 | 147 | 421 | 150 | 477 | 153 | 537 |
| Circuit 4 | 97 | 258 | 99 | 300 | 101 | 346 | 103 | 398 | 105 | 456 | 108 | 518 |
| | 105 | 263 | 107 | 304 | 109 | 351 | 112 | 402 | 114 | 459 | 117 | 521 |
| | 120 | 272 | 123 | 312 | 126 | 358 | 129 | 409 | 132 | 466 | 136 | 527 |
| | 137 | 280 | 141 | 320 | 145 | 365 | 148 | 416 | 152 | 472 | 156 | 532 |

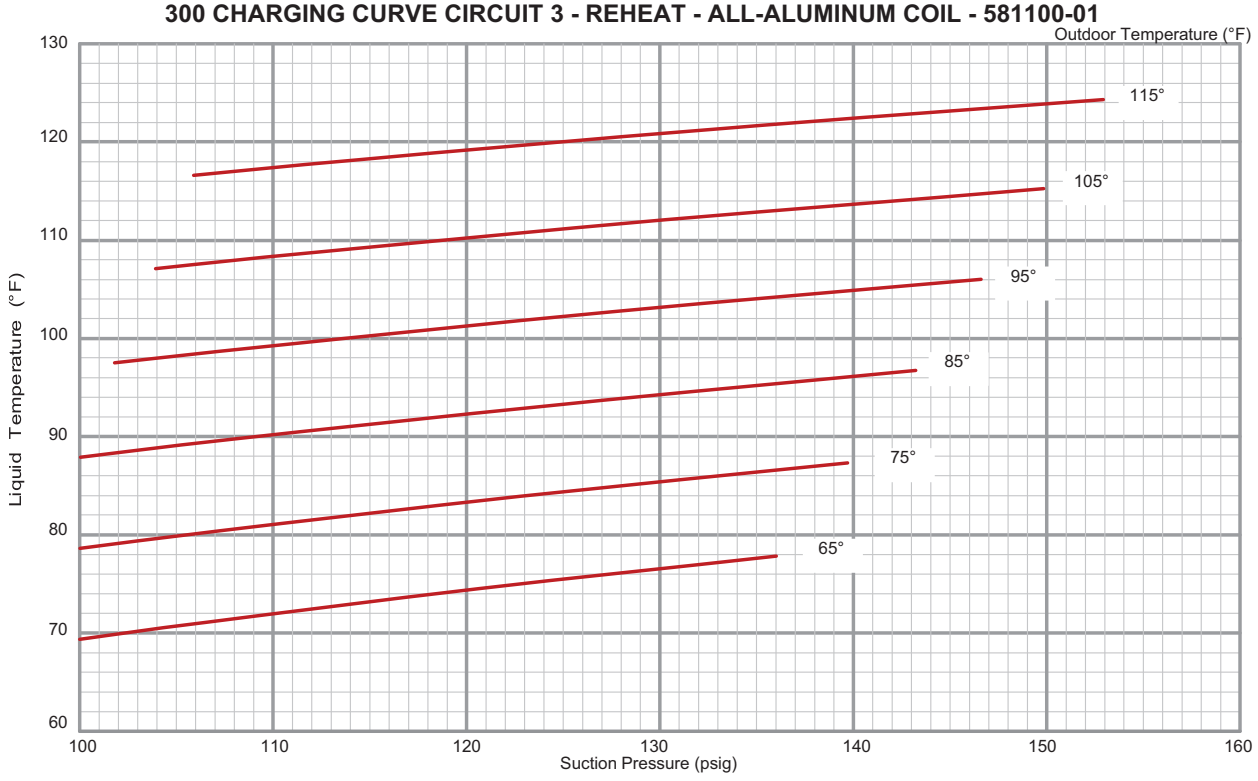
### 300 CHARGING CURVE CIRCUIT 1 - REHEAT - ALL-ALUMINUM COIL - 581100-01

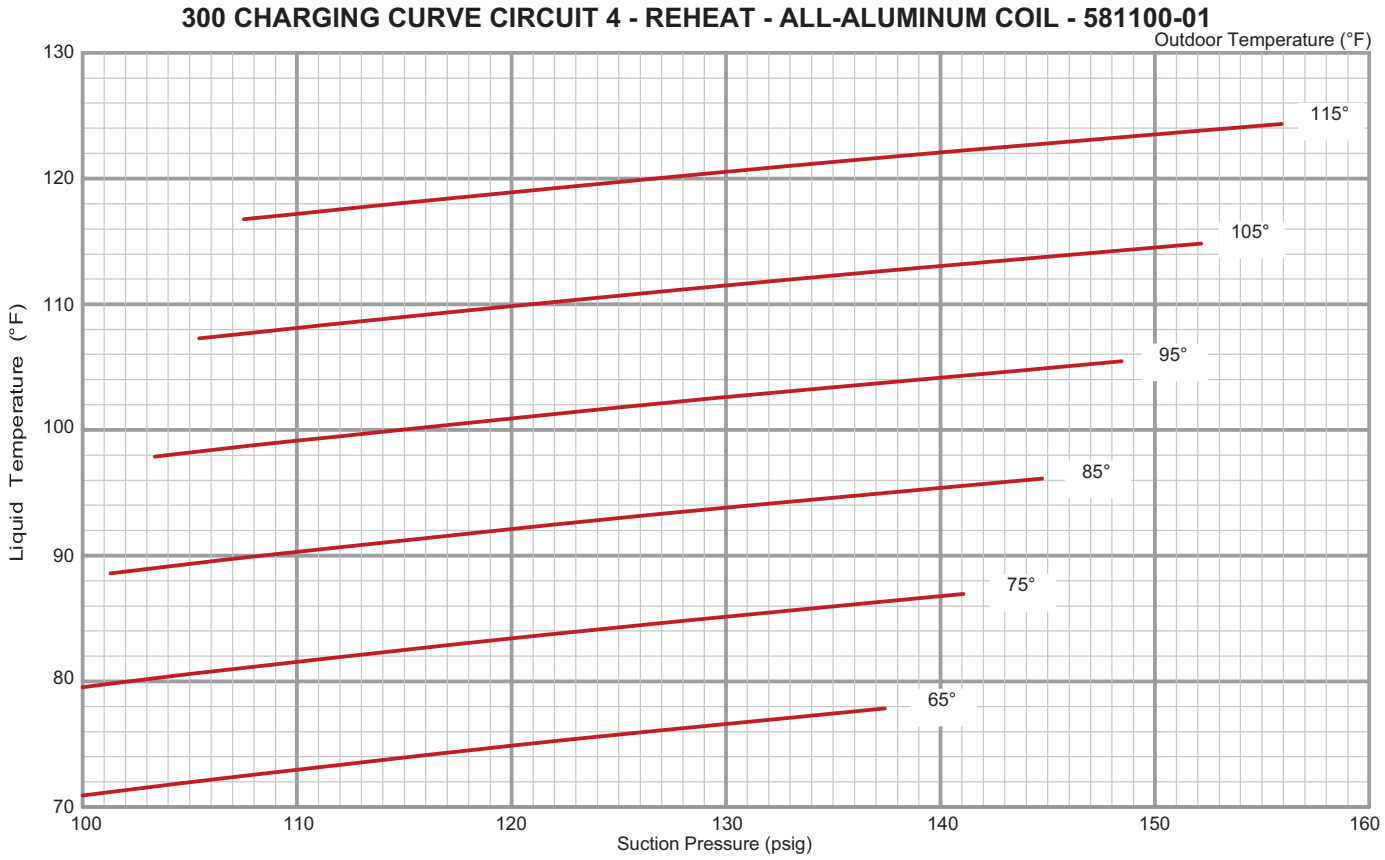


## 300 CHARGING CURVE CIRCUIT 2 - REHEAT - ALL-ALUMINUM COIL - 581100-01




## 300 CHARGING CURVE CIRCUIT 3 - REHEAT - ALL-ALUMINUM COIL - 581100-01






## IV- START-UP OPERATION

### 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 Start-up

***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 R410A refrigerant. See unit rating plate for correct amount of charge.

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

**C-Heating Startup**

**FOR YOUR SAFETY READ BEFORE LIGHTING**

## ⚠ WARNING

**Danger of explosion. Can cause injury or product or property damage. If overheating occurs or if gas supply fails to shut off, shut off the manual gas valve to the appliance before shutting off electrical supply.**

## ⚠ WARNING

**Electric shock hazard. Can cause injury or death. Do not use this unit if any part has been under water. Immediately call a qualified service technician to inspect the unit and to replace any part of the control system and any gas control which has been under water.**

**BEFORE LIGHTING** smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

Use only your hand to push in or turn the gas control knob. Never use tools. If the knob will not push in or turn by hand, do not try to repair it, call a qualified service technician. Force or attempted repair may result in a fire or explosion.

## ⚠ IMPORTANT

**This unit is equipped with an automatic spark ignition system. Do not attempt to light manually.**

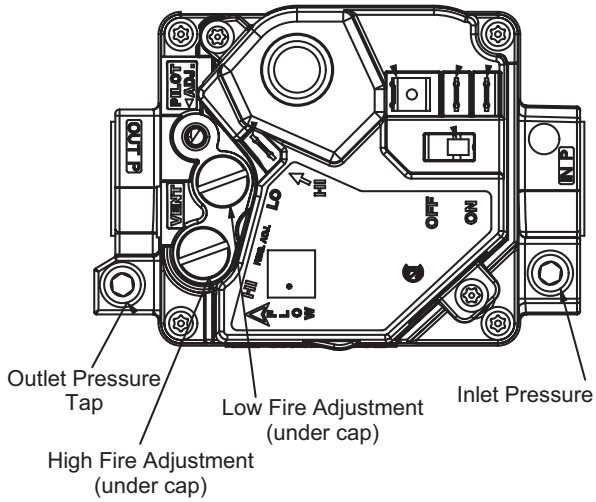
In case of a safety shutdown, move thermostat switch to **OFF** and return the thermostat switch to **HEAT** to reset ignition control.

**Placing Furnace In Operation**

**Gas Valve Operation FIGURE 29**

1 - Set thermostat to lowest setting.
2 - Turn off all electrical power to appliance.
3 - This appliance is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.
4 - Open or remove the heat section access panel.
5 - Turn the knob on the gas valve to **"OFF"**. Do not force.
6 - Wait five (5) minutes to clear out any gas. If you then smell gas, **STOP!** Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions. If you do not smell gas, go to the next step.

**WHITE RODGERS 36H54 GAS VALVE**
**Two-Stage**




GAS VALVE SWITCH SHOWN IN **ON** POSITION.

**FIGURE 29**

7 - Turn the knob on the gas valve to "ON". Do not force.
8 - Close or replace the heat section access panel.
9 - Turn on all electrical power to appliance.
10 - Set thermostat to desired setting.
11 - The combustion air inducer will start. The burners will light within 40 seconds.
12 - If the appliance does not light the first time (gas line not fully purged), it will attempt up to two more ignitions before locking out.
13 - If lockout occurs, repeat steps 1 through 10.
14 - If the appliance will not operate, follow the instructions "Turning Off Gas to Appliance" and call your service technician or gas supplier.

**Turning Off Gas to Appliance**

1 - If using an electromechanical thermostat, set to the lowest setting.
2 - Before performing any service, turn off all electrical power to the appliance.
3 - Open or remove the heat section access panel.
4 - Turn the knob on the gas valve to "OFF". Do not force.

**D-Safety or Emergency Shutdown**

Turn off power to the unit. Close manual and main gas valves.

## V- SYSTEMS SERVICE CHECKS

### A-Heating System Service Checks

All LGT units are ETL/CSA design certified without modification.

Before checking piping, check with gas company or authorities having jurisdiction for local code requirements. Refer to the LGT Installation, Operation and Maintenance instruction for more information.

#### 1-Gas Piping

Gas supply piping must not allow more than 0.5"W.C. drop in pressure between the gas meter and the unit. Supply gas pipe must not be smaller than the unit gas connection. Refer to installation instructions for details.

#### 2-Testing Gas Piping

***NOTE-****In case emergency shutdown is required, turn off the main manual shut-off valve and disconnect the main power to the unit. These controls should be properly labeled by the installer.*

When pressure testing gas lines, the gas valve must be disconnected and isolated. Gas valves can be damaged if subjected to more than 0.5 psig. See FIGURE 30.

When checking piping connection for gas leaks, use the preferred means. Common kitchen detergents can cause harmful corrosion on various metals used in gas piping.

The use of specialty Gas Leak Detector is strongly recommended. It is available through under part number 31B2001. See CORP 8411-L10, for further details. Do not use matches, candles, flame or any other source of ignition to check for gas leaks.

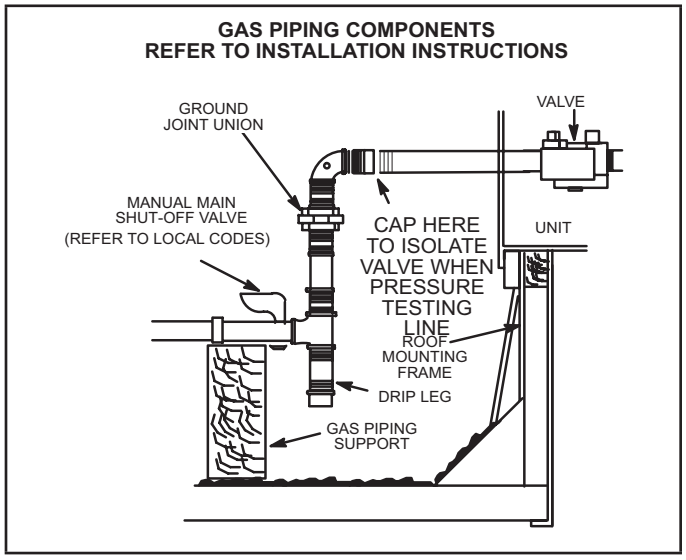



**FIGURE 30**

#### 3-Testing Gas Supply Pressure

When testing gas supply pressure, connect test gauge to the inlet pressure tap located on unit gas valve GV1 and or GV3. Test supply gas pressure with unit firing at maximum rate (both stages energized).

Make sure the reading falls within the range of the following values. Low pressure may result in erratic operation or "underfire." High pressure can result in permanent damage to the gas valve or "overfire.". See table 19 for supply pressures.

On multiple unit installations, each unit should be checked separately while operating at maximum rate, beginning with the one closest to the supply gas main and progressing to the one furthest from the main. Multiple units should also be tested with and without the other units operating. Supply pressure must fall within the range listed in the previous paragraph.

#### 4-Check and Adjust Manifold Pressure

After line pressure has been checked and adjusted, check manifold pressure. Move test gauge to the outlet pressure tap located on unit gas valve GV1 and or GV3. See FIGURE 29 for location of pressure tap on the gas valve.

The manifold pressure is factory set and should not require adjustment. If manifold pressure is incorrect and no other source of improper manifold pressure can be found, the valve must be replaced. See FIGURE 29 for location of gas valve (manifold pressure) adjustment screw.

All gas valves are factory regulated. The gas valve should completely and immediately cycle off in the event of gas or power failure. The manual shut-off knob can be used to immediately shut off gas supply.

**⚠ CAUTION**

**For safety, connect a shut-off valve between the manometer and the gas tap to permit shut off of gas pressure to the manometer.**

**Manifold Adjustment Procedure**

1 - Connect test gauge to the outlet pressure tap on the gas valve. Start the unit (call for second stage heat) and allow five minutes for the unit to reach steady state.

2 - While waiting for the unit to stabilize, notice the flame. The flame should be stable without flashback and should not lift from the burner heads. Natural gas should burn basically blue with some clear streaks. L.P. gas should burn mostly blue with some clear yellow streaks.

3 - After allowing the unit to stabilize for five minutes, record the manifold pressure and compare to the values given in TABLE 19.

**⚠ IMPORTANT**

Disconnect heating demand as soon as an accurate reading has been obtained.

**TABLE 19**

| Manifold Pressure "W.C. | | | | Supply Pressure "W.C. | |
|---|---|---|---|---|---|
| Natural | | LP.Propane | | Nat | LP |
| Low | High | Low | High | 4.7-10.5 | 10.8-13.5 |
| 1.6± 0.2 | 3.7±0.3 | 5.5± 0.3 | 10.5± 0.5 | | |

**Combustion gases**

Flue products must be analyzed and compared to the unit specifications. Problems detected during the inspection may make it necessary to temporarily shut down the furnace until the items can be repaired or replaced.

**5-Proper Gas Flow**

To check for proper gas flow to burners, determine Btuh input from unit rating plate or the gas heating capacity in the SPECIFICATIONS tables. Divide this input rating by the Btuh per cubic foot of available gas. Result is the number of cubic feet per hour required. Determine the flow of gas through gas meter for two minutes and multiply by 30 to get hourly flow of gas to the burners.

***NOTE -*** *To obtain accurate reading, shut off all other gas appliances connected to meter.*

**6-Inshot Burner**

Burners are factory set for maximum air and cannot be adjusted. Always operate unit with access panel in place. A peep hole is furnished in the heating access panel for flame viewing. Natural gas should burn basically blue with some clear streaks. L.P. gas should burn mostly blue with some clear yellow streaks.

Follow steps below to remove burner assembly.

1 - Turn off power to unit and shut off gas supply.
2 - Remove screws holding the burner support cap.
3 - Burner assembly is a cluster assembly (FIGURE 31) and can be removed as one.
4 - Clean and reassemble (reverse steps 1-3).
5 - Be sure to secure all wires and check plumbing.
6 - Turn on power to unit. Follow lighting instructions attached to unit and operate unit in heating mode. Check burner flames. They should be blue with yellow streaks.

**7-Spark Electrode Gap**

The spark electrode assembly can be removed for inspection by removing two screws securing the electrode assembly and sliding it out of unit.

For proper unit operation, electrodes must be positioned and gapped correctly.

Spark gap may be checked with appropriately sized twist drills or feeler gauges. Disconnect power to the unit and remove electrode assembly. The gap should be between 0.125" ± 0.015". See FIGURE 27.

**TYPICAL GAS BURNER ASSEMBLY**

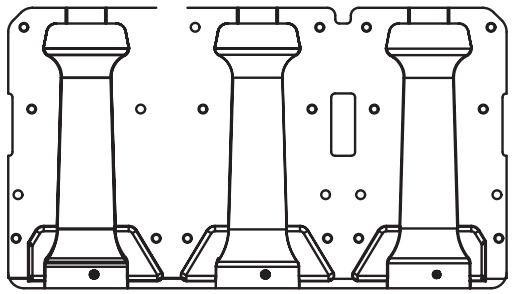


**FIGURE 31**

**8-Heat Exchanger**

To Access or Remove Heat Exchanger From Unit:

1 - Turn off gas and electric power.
2 - Remove access panel(s) and unit center mullion.
3 - Remove gas valve, manifold assembly and burners.
4 - Remove combustion air inducer and flue box. Pay careful attention to the order in which gaskets and orifice are removed.
5 - Support heat exchanger (to prevent it from falling when final screws are removed.)
6 - Remove screws supporting heat exchanger.
7 - To install heat exchanger, reverse procedure. Be sure to secure all wires and check plumbing and burner plate for airtight seal. Screws must be torqued to 35 in.-lbs. to ensure proper operation.

**9-Flame Sensing**

Flame current is an electrical current which passes from the ignition control through the sensor electrode during unit operation. The current passes from the sensor through the flame to the ground electrode (located on the flame electrode) to complete a safety circuit. The electrodes should be located so the tips are at least 1/2" (12.7 mm) inside the flame envelope. Do not bend electrodes. To measure flame current, follow the procedure on the following page:

***NOTE-****Electrodes are not field adjustable. Any alterations to the electrode may create a hazardous condition that can cause property or personal injury.*

1 - Disconnect power to unit.
2 - Remove lead from sensing electrode and install a 0-50DC microamp meter in series between the sensing electrode and the sensing lead.
3 - Reconnect power and adjust thermostat for heating demand.
4 - When flame is established, compare reading to TABLE 20. Do not bend electrodes.
5 - Disconnect power to unit before disconnecting meter. Make sure sensor wire is securely reconnected before reconnecting power to unit.

**TABLE 20**

| Manufacturer | Nominal Signal Microamps | Drop Out |
|---|---|---|
| UTEC | 0.5 - 1.0 | .09 |

***NOTE-****If the meter scale reads 0, the leads are reversed. Disconnect power and reconnect leads for proper polarity.*

**10-Combustion Air Inducer**

The combustion air inducer is factory set and is not field adjustable. However, operation should be monitored to ensure proper operation. The combustion air inducer is used to draw fresh air into the combustion chamber while simultaneously expelling exhaust gases. The inducer operates throughout the heating cycle.

On a heating demand, the ignition control is energized by the A55 Unit Controller. The ignition control then allows 30 to 40 seconds for the combustion air inducer to vent exhaust gases from the burners. When the combustion air inducer is purging the exhaust gases, the combustion air prove switch is closing proving that the combustion air inducer is operating before allowing the ignition control to energize. When the combustion air prove switch is closed and the delay is over, the ignition control activates the first stage operator of the gas valve (low fire), the spark and the flame sensing electrode. Sparking stops immediately after flame is sensed.

**B-Cooling System Service Checks**

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

**VI-MAINTENANCE**

**⚠ 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.**

**A-Filters**

LGT 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 LGT 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 LGT units.

### A-Roof Curbs

When installing the LGT 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 32. 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 33. 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 LGT 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.

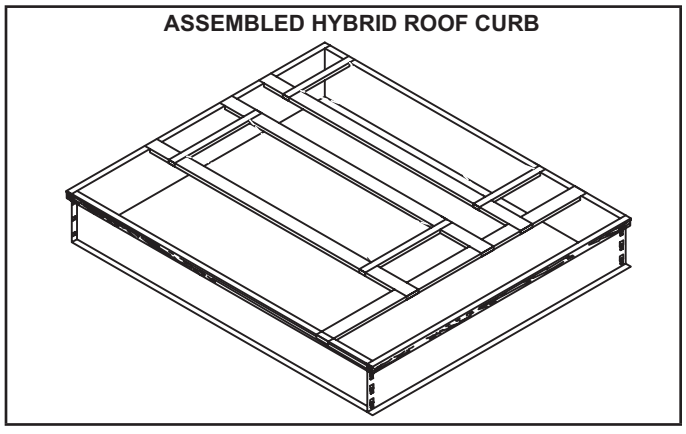



**FIGURE 32**

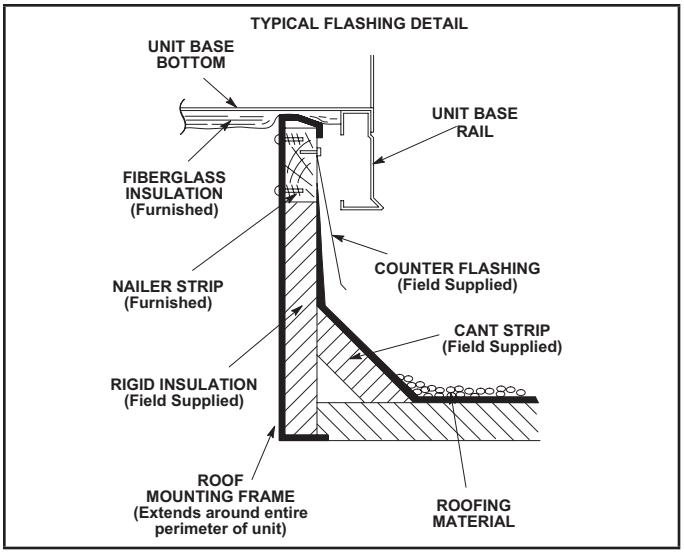



**FIGURE 33**

### B-Transitions

Optional supply/return transitions C1DIFF33C-1 and C1DIFF34C-1 are available for use with LGT 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 34) 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 (see FIGURE 34). Either air damper can be installed in LGT 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.

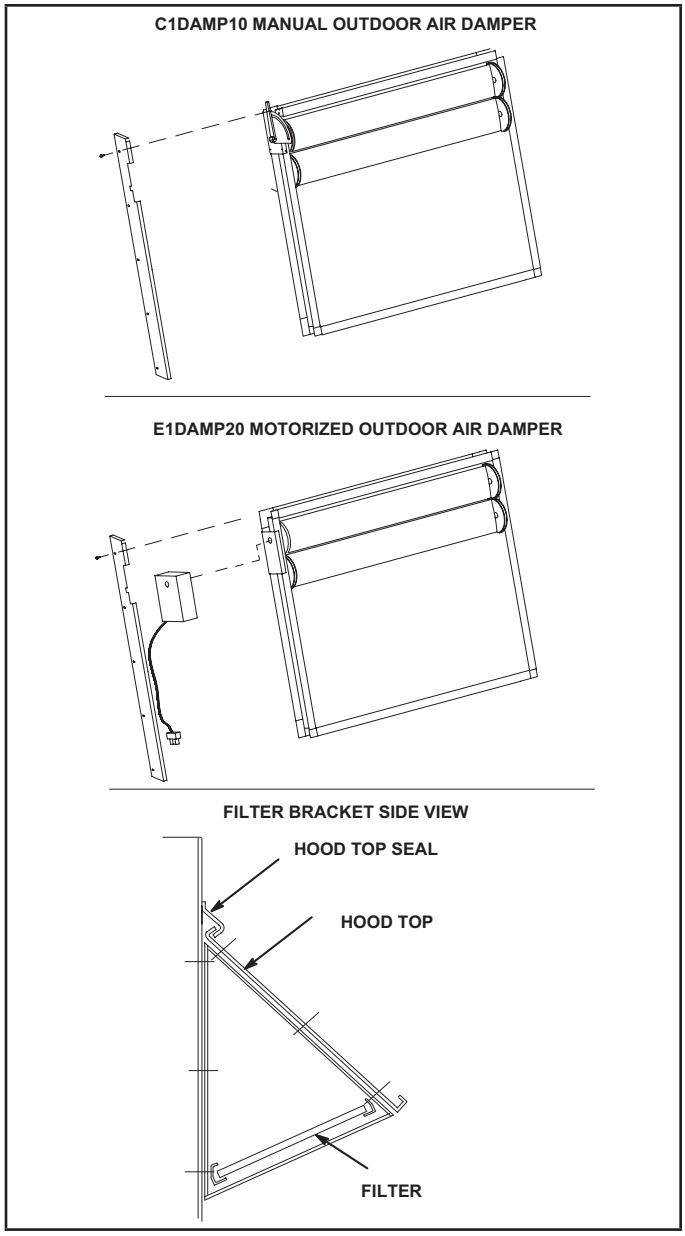



**FIGURE 34**

**D-Supply and Return Diffusers**

Optional flush mount diffuser/return FD11 and extended mount diffuser/return RTD11 are available for use with all LGT 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

Dampers (FIGURE 35) 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 LGT 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.

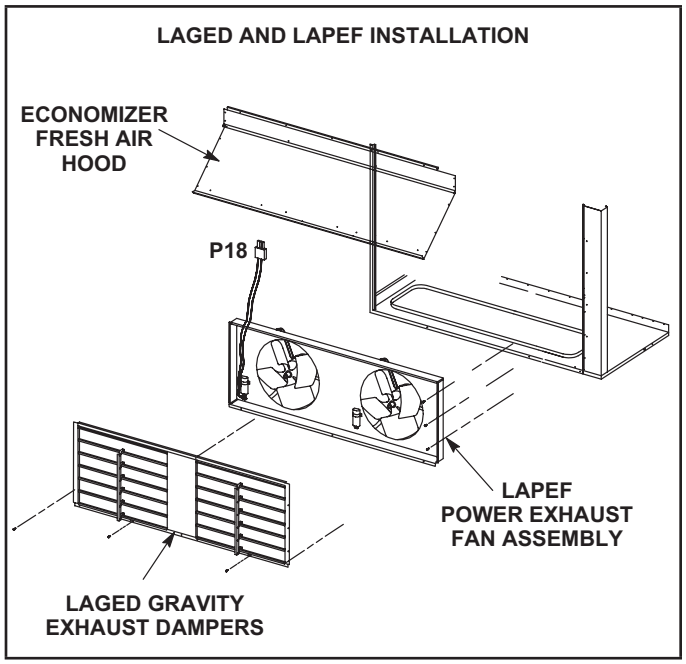



**FIGURE 35**

### 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 35 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-LP / Propane Kit**

Units require two (one for each gas heat section) natural to LP/propane kit. The kit includes one gas valve, eleven burner orifices and three stickers. For more detail refer to the natural to LP gas changeover kit installation instructions.

**N-Indoor Air Quality (CO2) Sensor A63**

The indoor air quality sensor monitors CO2 levels and reports the levels to the A55 Unit Controller. The board adjusts the economizer dampers according to the CO2 levels. The sensor is mounted next to the indoor thermostat or in the return air duct. Refer to the indoor air quality sensor installation instructions for proper adjustment. Wiring for the indoor air quality switch is shown on the temperature control section (C) wiring diagram in back of this manual.

**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.

**P-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.

**Q-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 36. 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.

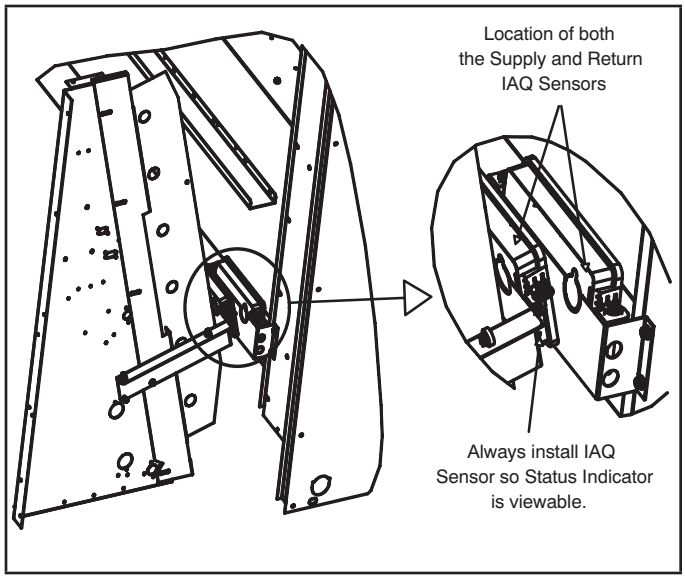



**FIGURE 36**

**R-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 21 for unit application.

**TABLE 21**

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

## VIII-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 37 through FIGURE 42 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 22. 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 22**

| 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 23 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.*

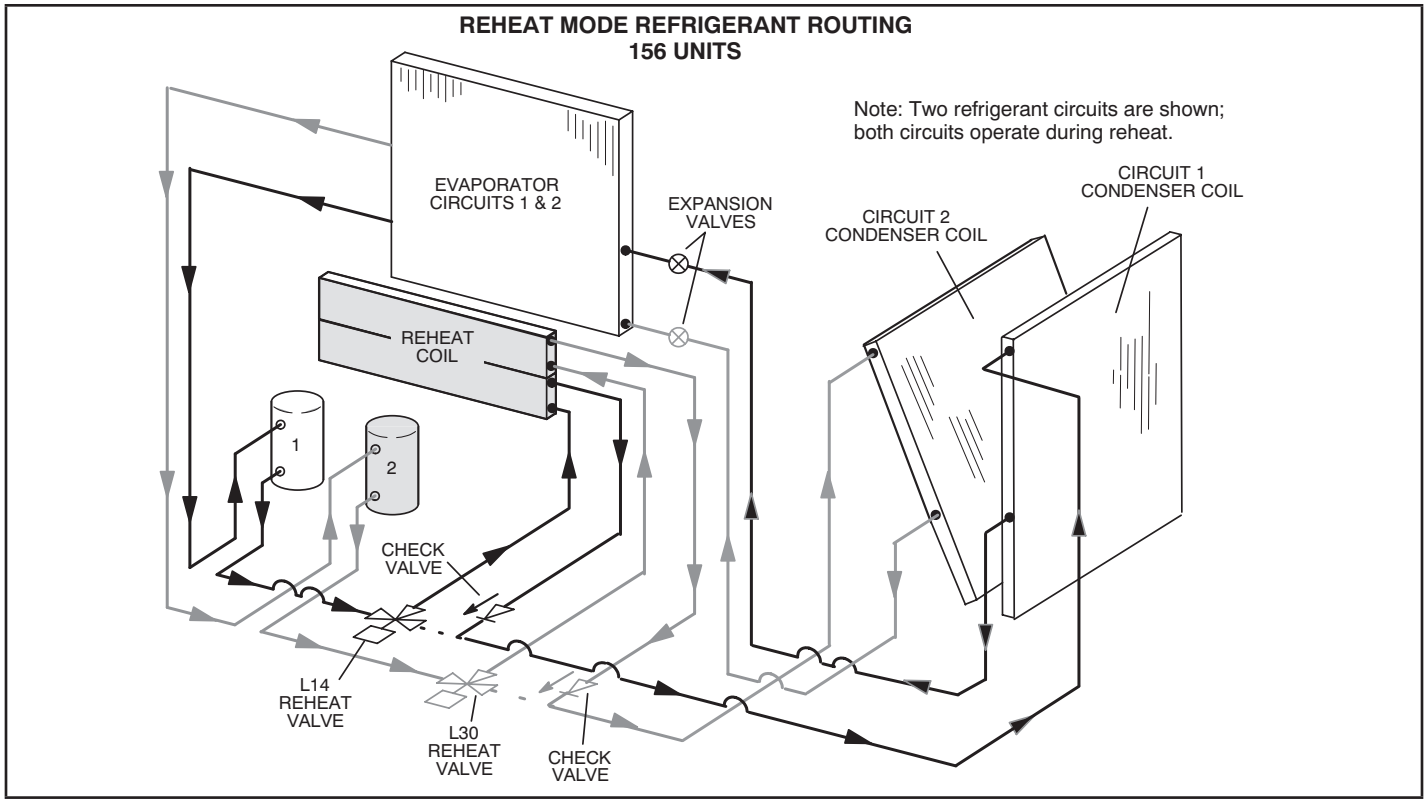



**FIGURE 37**

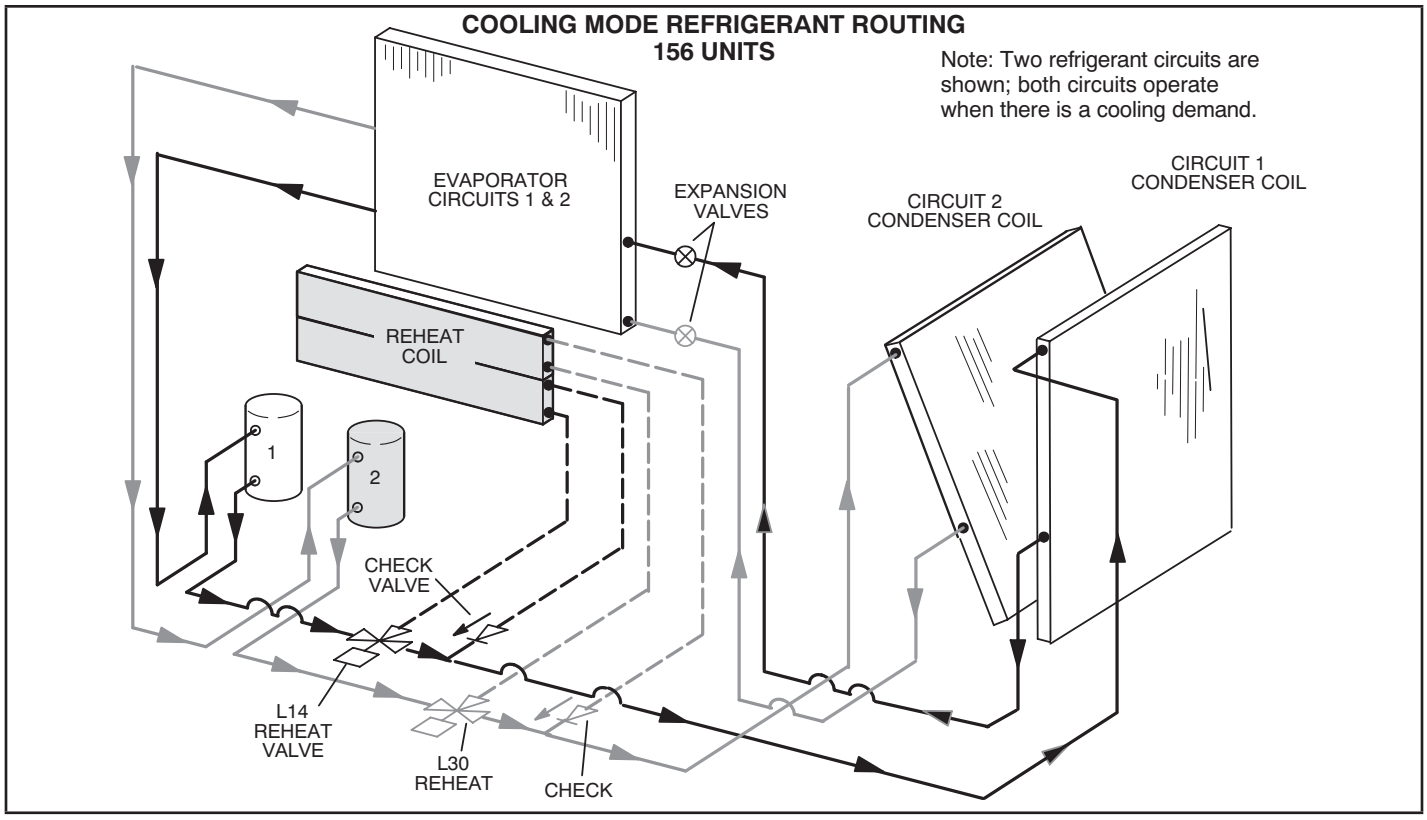



**FIGURE 38**

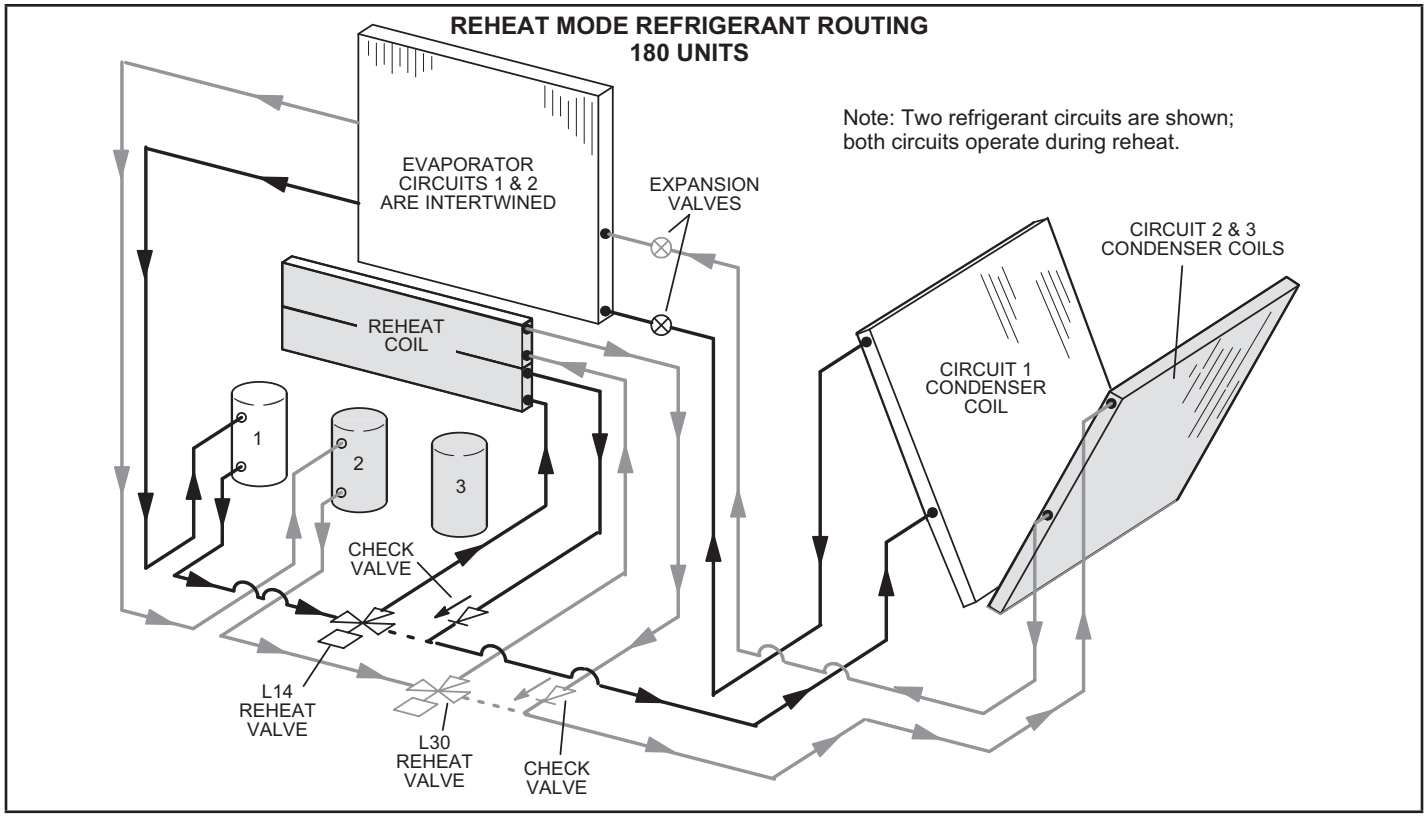



**FIGURE 39**

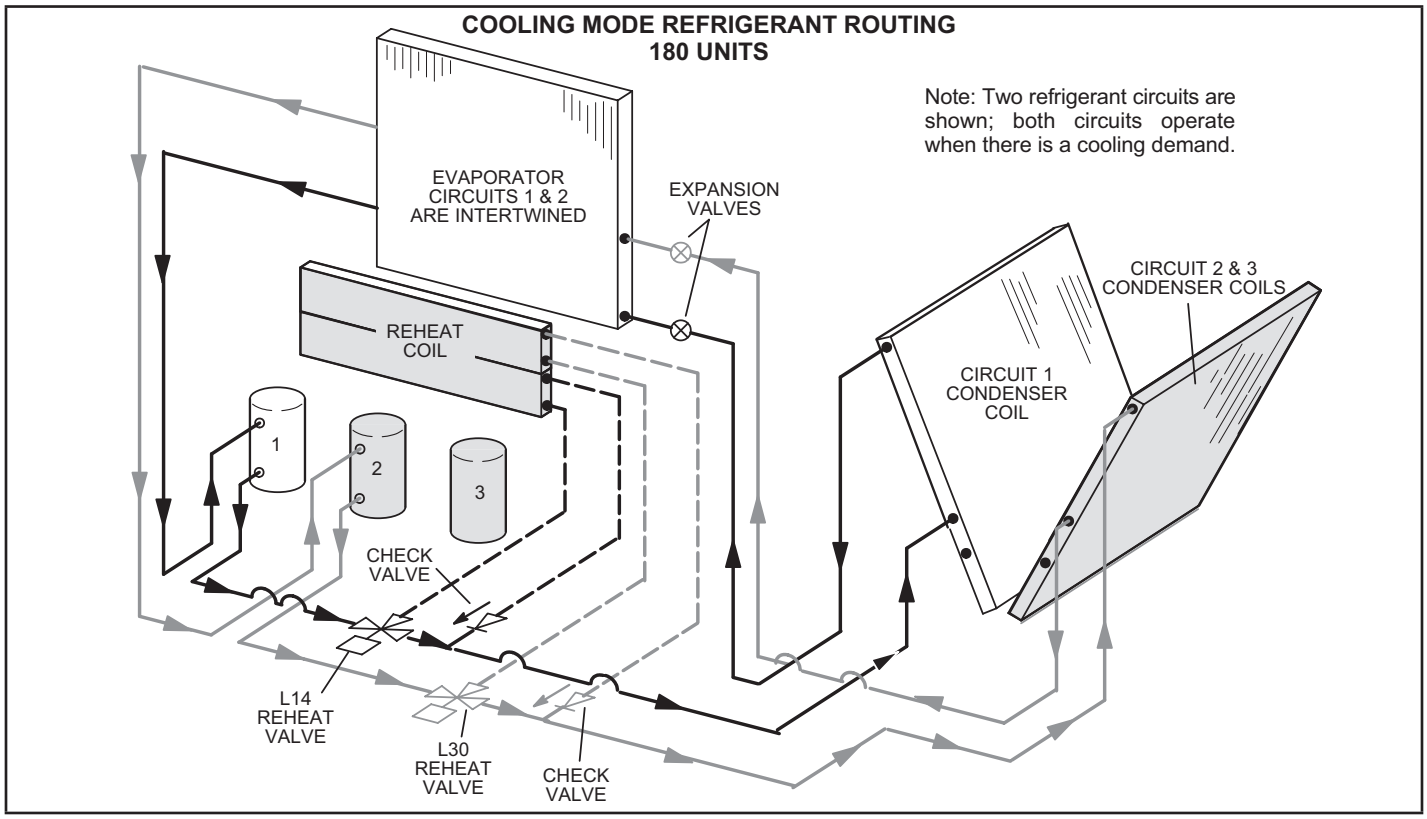



**FIGURE 40**

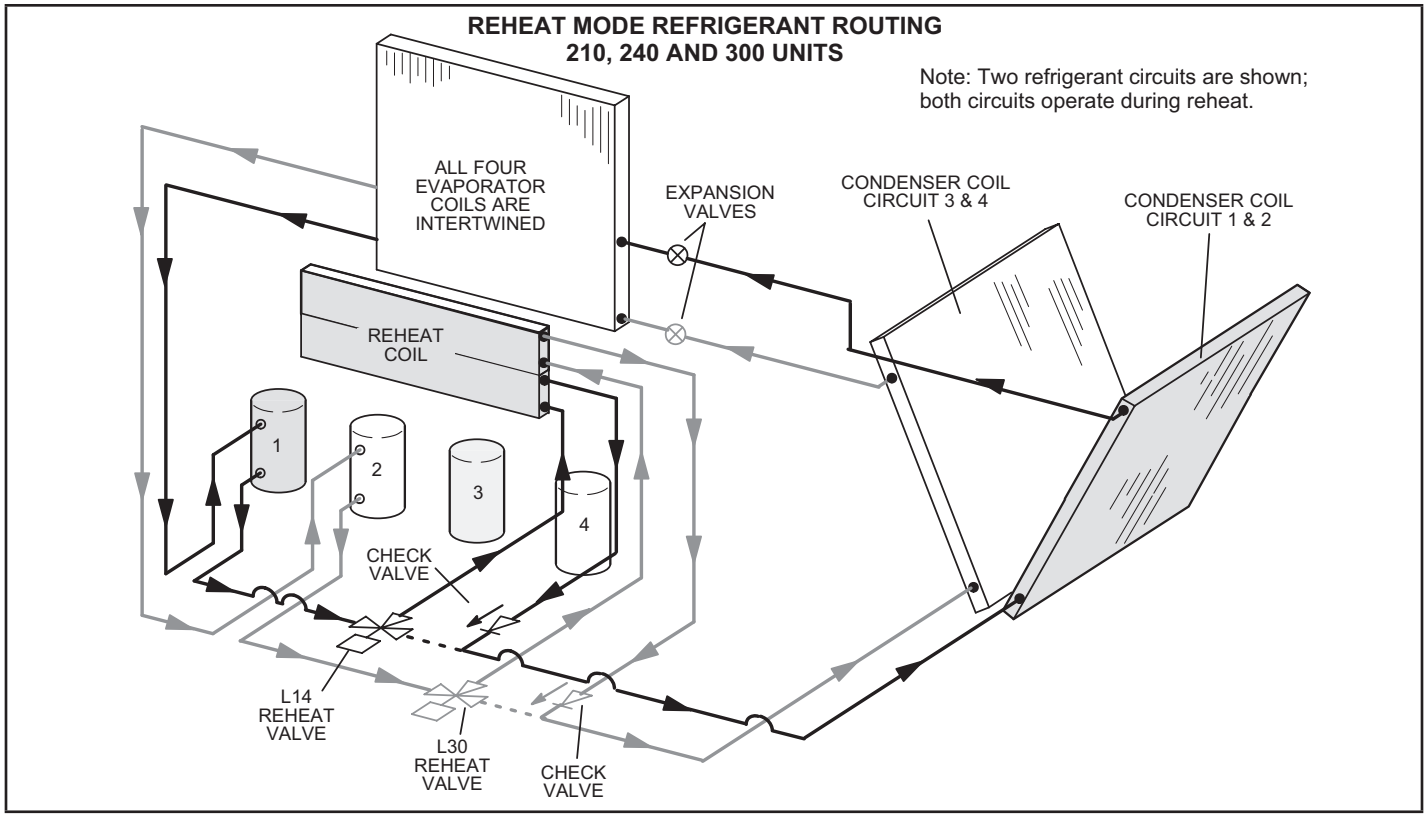



**FIGURE 41**

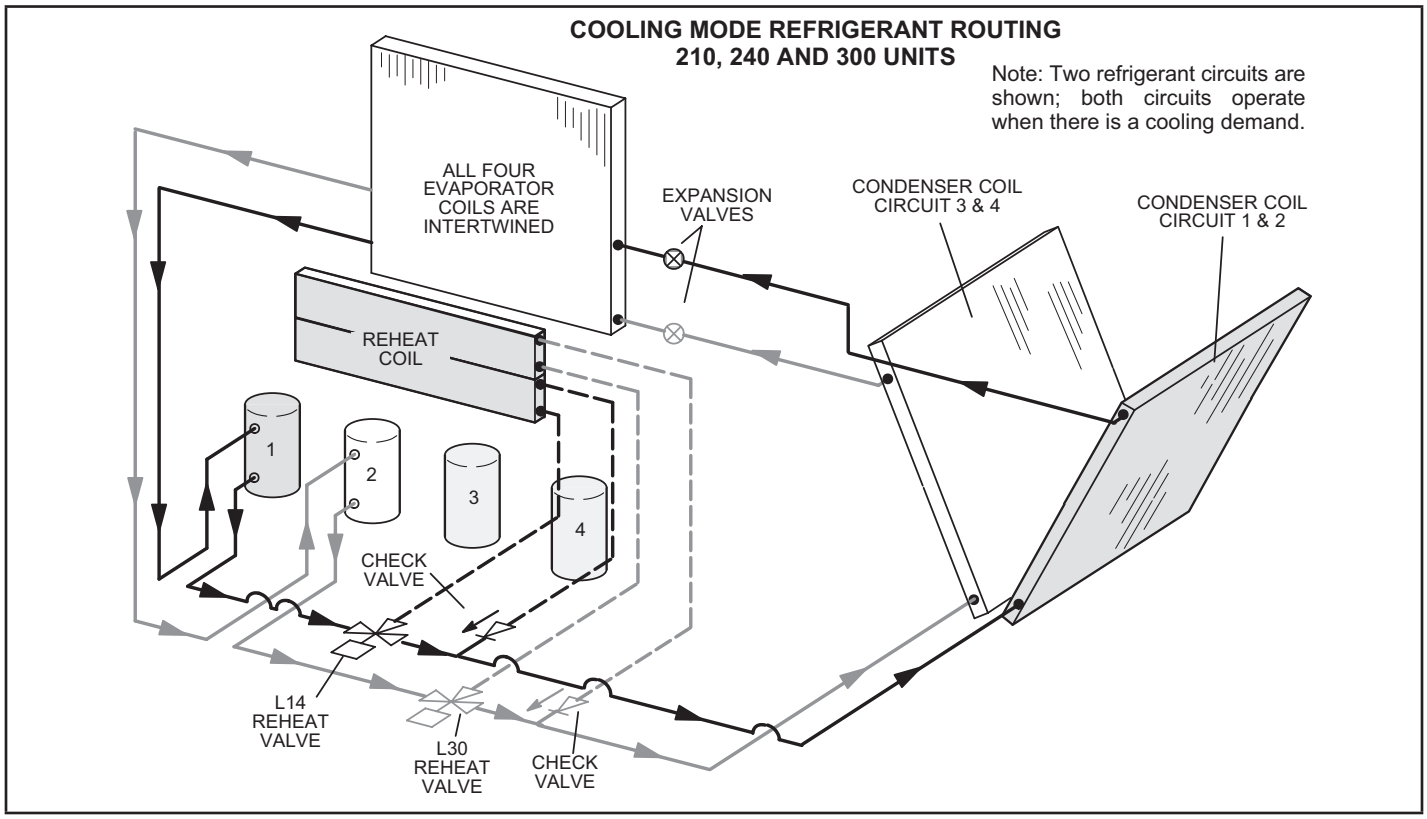



**FIGURE 42**

**TABLE 23**

**REHEAT OPERATION**

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

**IX--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 24 or TABLE 25. Refer to the Unit Controller manual provided with unit.

*RTU MENU > RTU OPTIONS > BLOWER > SPEED*

2 - Enter the following design specifications as shown in the attached table (table18 in the installation instructions).

*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 24**

**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 | LGT156H | 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 | LGT180H | 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 | LGT210H | 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 | LGT240H | 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 | LGT300S | Low, Std, Med | L, S, M | 10000 | 4500 | | 10000 | 3750 | | 10000 | 3750 | 1200 |
| | | High | H | | 5125 | | | | | | | |
| | LCT300S | 15, 30, 45, 60kW | N, E, J, L | | 5200 | | | | | | | |
| | | 90kW | P | | 6000 | | | | | | | |

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

**TABLE 25**

**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 |
| 300S | 6500 | 3500 | 12000 | 9000 | 7000 | 12000 |

*Use Cooling High CFM Max

**X--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 44.

**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 43. 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 44.

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 26.

**TABLE 26**

**RECORD ADJUSTED SETPOINTS**

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

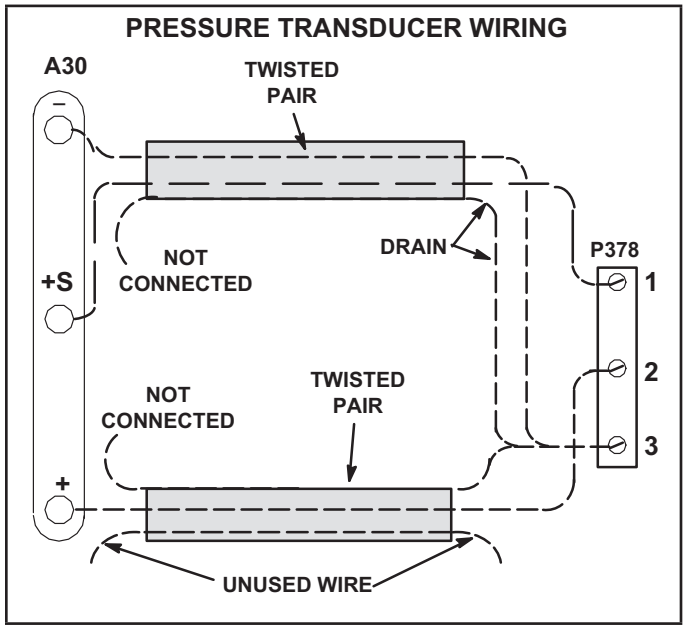



**FIGURE 43**

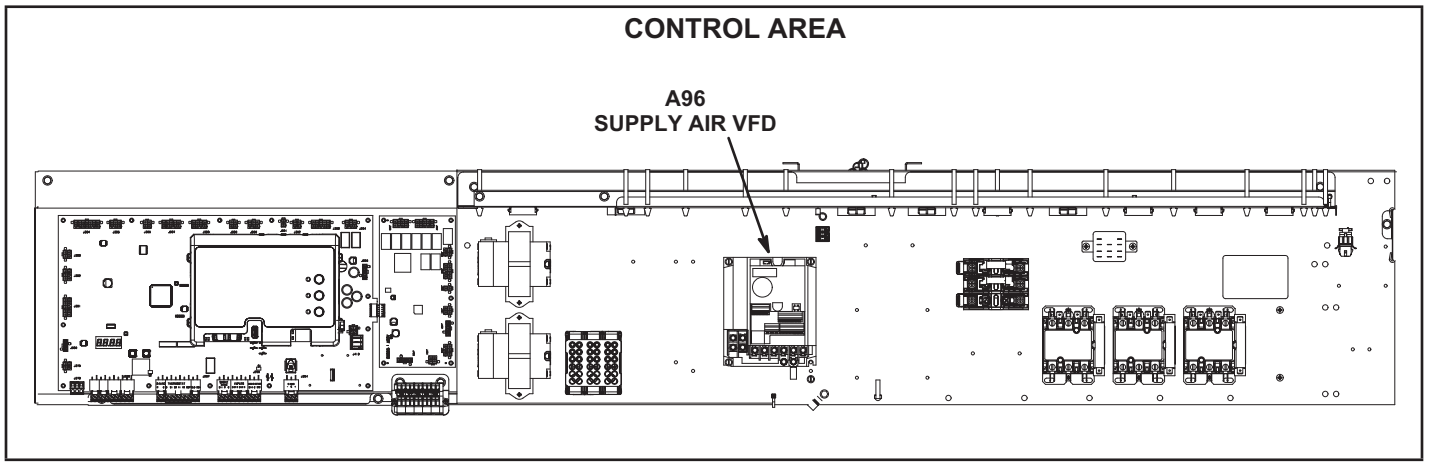



**FIGURE 44**

**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 45.

3 - Disconnect P246 from P246 (power in to VFD) and P247 from P247 (power out to blower). See FIGURE 46.

4 - Connect P246 to P247. See FIGURE 47.

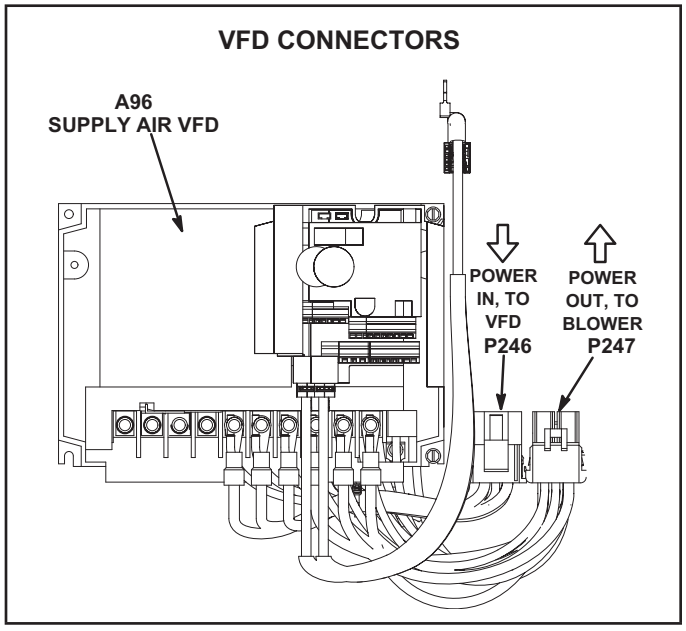



**FIGURE 45**

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 14. Do not exceed minimum and maximum number of pulley turns as shown in table 5.

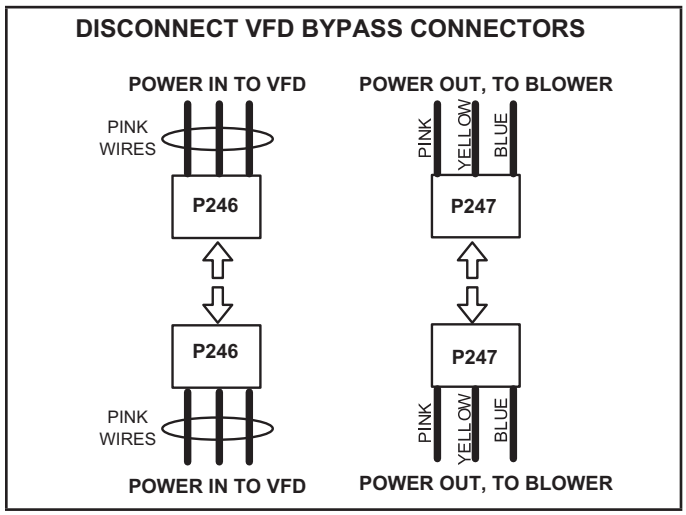



**FIGURE 46**

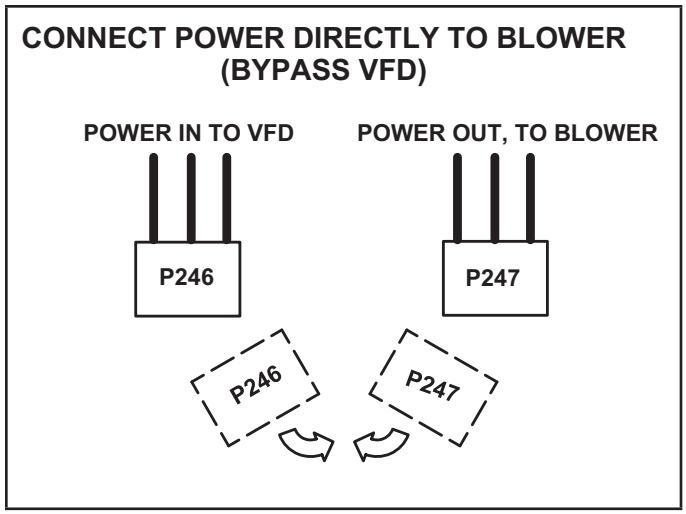
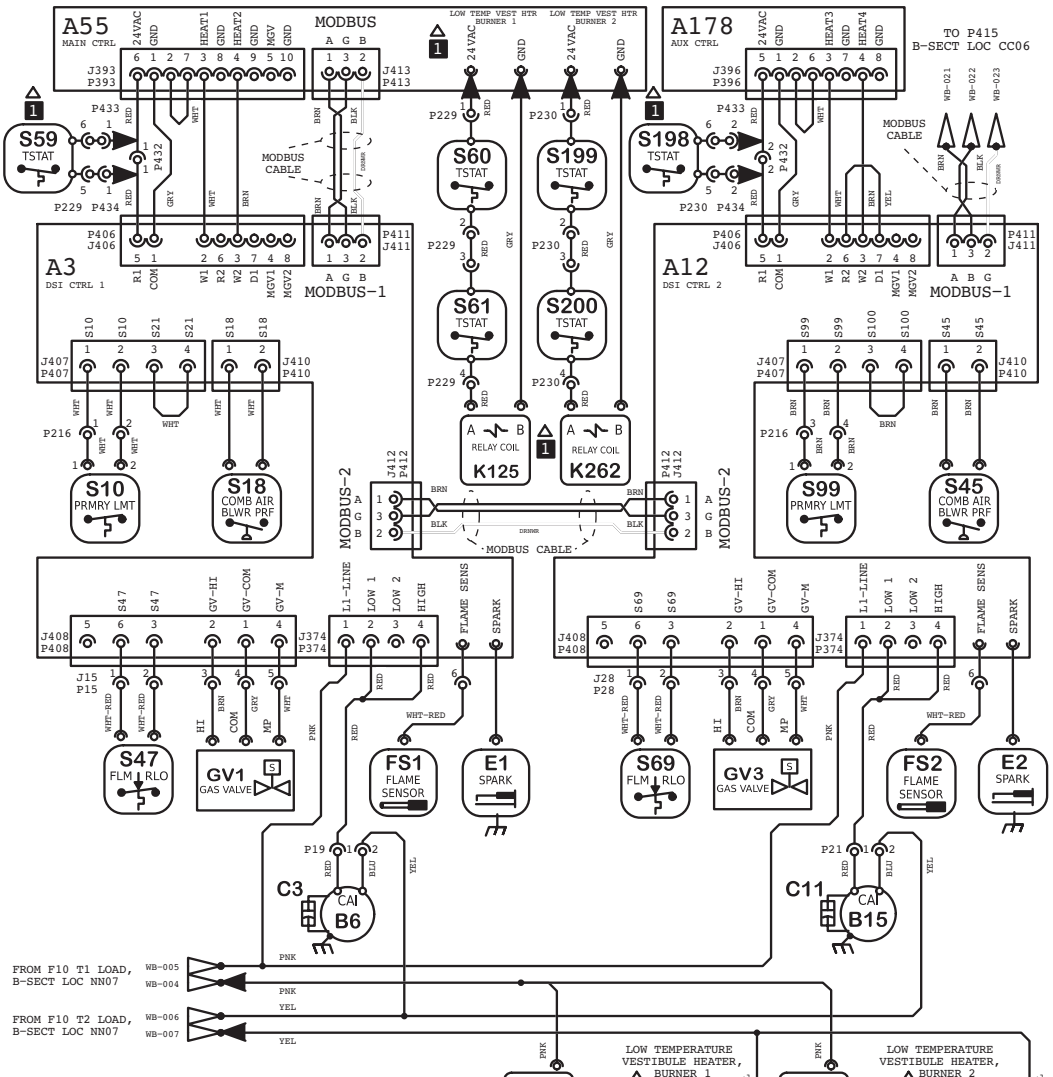



**FIGURE 47**

## XI-Wiring Diagrams and Sequence of Operation

### GAS HEAT DIAGRAM




| KEY LIST | | |
|---|---|---|
| LOCATION | COMPONENT DESCRIPTION | |
| A1/A2 | A3, A12 | CONTROL BOARD, DSI BURNER 1, 2 |
| A55 | A55 | CONTROL BOARD, MAIN |
| A178 | A178 | CONTROL BOARD, EXTENSION |
| B6/B15 | B6, B15 | MOTOR, COMBUSTION AIR IND., BURNER 1, 2 |
| C3/C11 | C3, C11 | CAPACITOR, CAI MOTOR 1, 2 |
| E1/E2 | E1, E2 | IGNITER, SPARK, BURNER 1, 2 |
| FS1/FS2 | FS1, FS2 | SENSOR, FLAME, BURNER 1, 2 |
| GV1/GV2 | GV1, GV2 | VALVE, GAS, BURNER 1, 2 |
| HR6/HR16 | HR6, HR16 | HEATER, -50C LOW TEMP VEST, BURNER 1, 2 |
| K125/K262 | K125, K262 | RELAY, LOW TEMP VEST HEATER, BURNER 1, 2 |
| S10/S99 | S10, S99 | LIMIT, PRIMARY, BURNER 1, 2 |
| S18/S45 | S18, S45 | SWITCH, COMB AIR BLWR PROOF, BURNER 1, 2 |
| S47/S69 | S47, S69 | SWITCH, FLAME ROLLOUT, BURNER 1, 2 |
| S59/S198 | S59, S198 | TSTAT, OPEN -20F, CLOSE 10F, BURNER 1, 2 |
| S60/S199 | S60, S199 | TSTAT, OPEN 20F, CLOSE -10F, BURNER 1, 2 |
| S61/S200 | S61, S200 | TSTAT, OPEN 50F, CLOSE 20F, BURNER 1, 2 |

| NOTES | |
|---|---|
| 1 | - 50C LOW TEMPERATURE VESTIBULE HEATER - OPTIONAL |

DENOTES OPTIONAL COMPONENTS AND WIRING

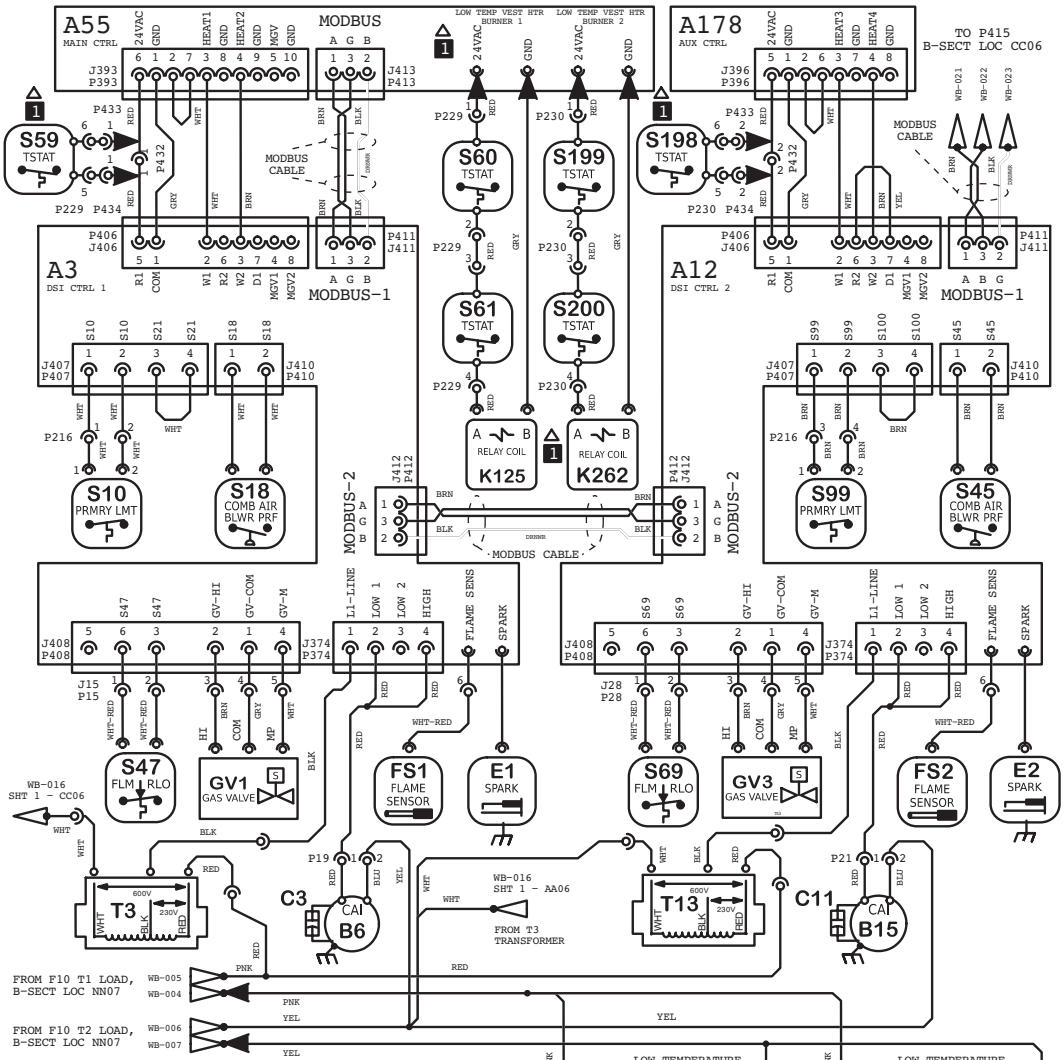


| HEATING SECTION A | COOLING SECTION B | COOLING SECTION B3 | ACCS SECTION C | ACCS SECTION D |
|---|---|---|---|---|

WIRING DIAGRAM FLOW

Model: LGT, LDT Series RTU - Gas Heat
Input Heat Capacity 169k - 480k Btuh
Voltage: 208-240V/3~/60Hz (Y), 460V/3~/60Hz (G)
Supersedes: N/A Form No: 538225-01 Rev: 0

## GAS HEAT DIAGRAM




| KEY LIST | | |
|---|---|---|
| LOCATION | | COMPONENT DESCRIPTION |
| AA/EE02 | A3, A12 | CONTROL BOARD, DSI BURNER 1, 2 |
| AA01 | A55 | CONTROL BOARD, MAIN |
| BB01 | A178 | CONTROL BOARD, EXTENSION |
| BB/EE07 | B6, B15 | MOTOR, COMBUSTION AIR IND., BURNER 1, 2 |
| BB/EE08 | C3, C11 | CAPACITOR, CAI MOTOR 1, 2 |
| CC/FF06 | E1, E2 | IGNITER, SPARK, BURNER 1, 2 |
| CC/FF09 | FS1, FS2 | SENSOR, FLAME, BURNER 1, 2 |
| DD/EE09 | GV1, GV2 | VALVE, GAS, BURNER 1, 2 |
| DD/FF05 | HR6, HR16 | HEATER, -50C LOW TEMP VEST, BURNER 1, 2 |
| CC/DD08 | K125, K262 | RELAY, LOW TEMP VEST HEATER, BURNER 1, 2 |
| DD/EE08 | K125, K262 | |
| AA/EE04 | S10, S99 | LIMIT, PRIMARY, BURNER 1, 2 |
| BB/FF04 | S18, S45 | SWITCH, COMB AIR BLWR PROOF, BURNER 1, 2 |
| AA/DD09 | S47, S69 | SWITCH, FLAME ROLLOUT, BURNER 1, 2 |
| AA/DD02 | S59, S198 | TSTAT, OPEN -20F, CLOSE 10F, BURNER 1, 2 |
| CC/DD02 | S60, S199 | TSTAT, OPEN 20F, CLOSE -10F, BURNER 1, 2 |
| CC/DD03 | S61, S200 | TSTAT, OPEN 50F, CLOSE 20F, BURNER 1, 2 |
| AA06 | T3 | TRANSFORMER, CAB MOTOR 1 |
| BB06 | T13 | TRANSFORMER, CAB MOTOR 2 |

| NOTES | |
|---|---|
| 1 | - 50C LOW TEMPERATURE VESTIBULE HEATER - OPTIONAL |

DENOTES OPTIONAL COMPONENTS AND WIRING



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

WIRING DIAGRAM FLOW

Model: LGT, LDT Series RTU - Gas Heat
Input Heat Capacity 169k - 480k Btuh
Voltage: 575V/3~/60Hz (J)
Supersedes: N/A Form No: 538226-01 Rev: 0

**Sequence of Operation Gas Heat LGT156/300**

**FIRST STAGE HEAT:**

1 - Heating demand initiates at W1 in thermostat.

2 - 24VAC is routed to the A55 Unit Controller. After A55 proves N.C. primary limit S10, the combustion air blower B6 is energized.

3 - After the combustion air blower B6 has reached full speed, the combustion air proving switch (S18) contacts close. The A55 routes 24VAC through N.C. burner 1 flame rollout switch S47 and the closed contacts of the combustion air proving switch (S18) to energize the ignition module A3. After a 30 second delay A3 energizes the gas valve GV1 on low fire.

4 - As steps 2, 3 and 4 occur, A55 proves N.C. primary gas heat limit S99 and the combustion air blower B15 is energized.

5 - After the combustion air blower B15 has reached full speed, the combustion air proving switch (S45) contacts close. The A55 routes 24VAC through N.C. burner 2 flame rollout switch S69 and the closed contacts of the combustion air proving switch (S45) to energize the ignition module A12. After a 30 second delay A12 energizes gas valve GV3 on low fire.

**SECOND STAGE HEAT:**

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

7 - A second stage heating demand is received by A55.

8 - A55 will energize the corresponding gas valves GV1 and GV3 on high fire.

**OPTIONAL LOW AMBIENT KIT**

**(C.G.A. -50° C LOW AMBIENT KIT):**

9 - When heat section temperature drops below -20°F, S59 opens and de-energized A3 and A12 ignition controls. At the same temperature, S60 closes and energizes K125. K125-1 contacts close energizing HR6 Cold Weather Kit electric heat.

10 - When heat section temperature rises to 10°F, S59 closes allowing power to A3 and A12 ignition controls. At the same temperature, S60 opens and de-energizes K125. K125-1 contacts open de-energizing HR6 Cold Weather Kit electric heat.

11 - If heat section temperature rises above 50°F, S61 will open and de-energize K125. K125-1 contacts will open and de-energize HR6 Cold Weather Kit electric heat. If heat section temperature drops to 20°F, S61 will close and allow power to K125.

**END OF SECOND STAGE HEAT:**

12 - Heating demand is satisfied. Terminal W2 is de-energized.

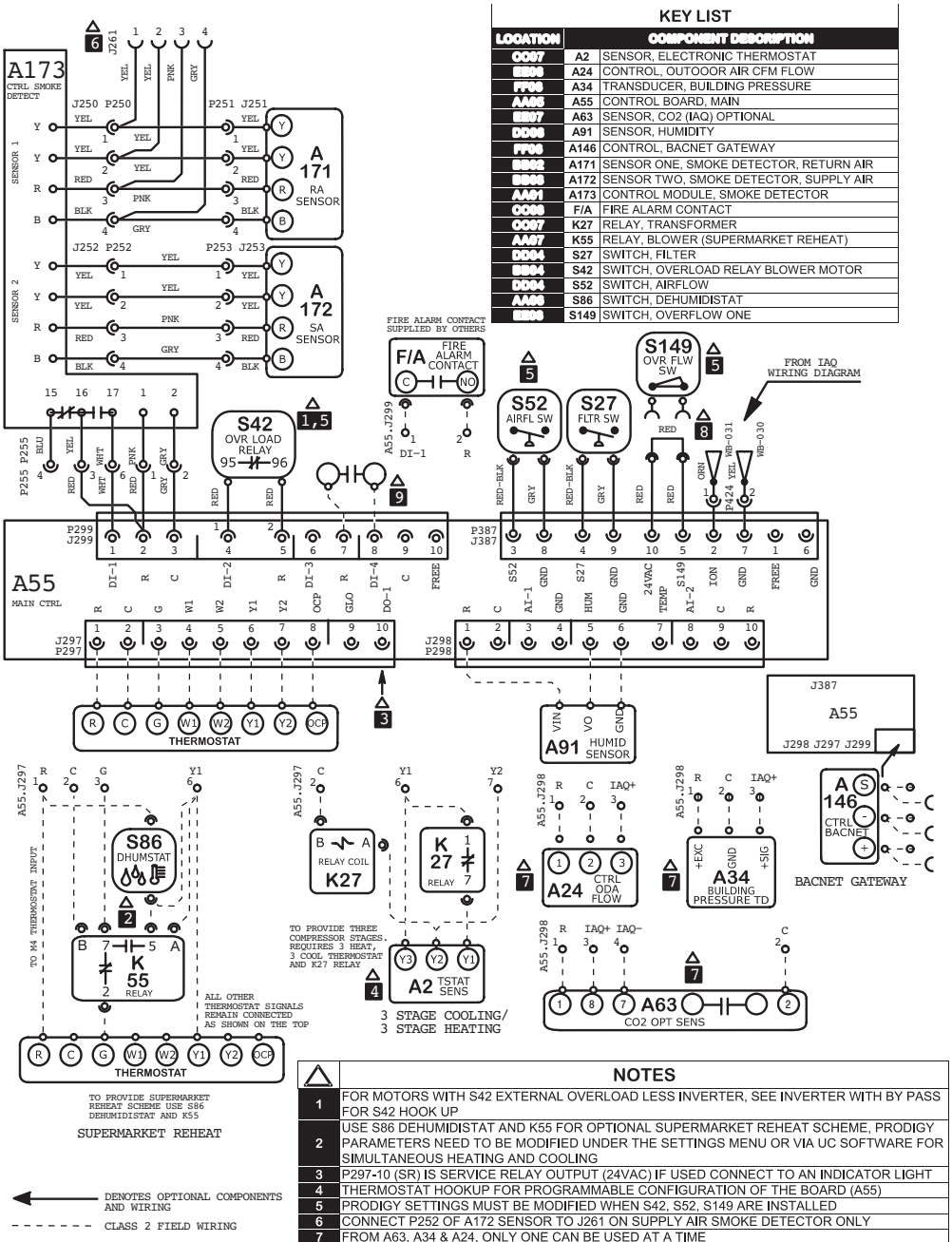
13 - High fire on GV1 and GV3 are de-energized by the A55.

**END OF FIRST STAGE HEAT:**

14 - Heating demand is satisfied. Terminal W1 is de-energized.

15 - Ignition module A3 is de-energized by A55 in turn de-energizing GV1. Combustion blower air blower B6 is also de-energized. At the same instant, ignition module A12 is de-energized by A55 in turn de-energizing GV3. B6 combustion air blower is also de-energized.

# THERMOSTAT




| KEY LIST | | |
|---|---|---|
| LOCATION | | COMPONENT DESCRIPTION |
| CC07 | A2 | SENSOR, ELECTRONIC THERMOSTAT |
| [illegible] | A24 | CONTROL, OUTOOOR AIR CFM FLOW |
| [illegible] | A34 | TRANSDUCER, BUILDING PRESSURE |
| [illegible] | A55 | CONTROL BOARD, MAIN |
| [illegible] | A63 | SENSOR, CO2 (IAQ) OPTIONAL |
| DD06 | A91 | SENSOR, HUMIDITY |
| [illegible] | A146 | CONTROL, BACNET GATEWAY |
| [illegible] | A171 | SENSOR ONE, SMOKE DETECTOR, RETURN AIR |
| [illegible] | A172 | SENSOR TWO, SMOKE DETECTOR, SUPPLY AIR |
| [illegible] | A173 | CONTROL MODULE, SMOKE DETECTOR |
| CC06 | F/A | FIRE ALARM CONTACT |
| CC07 | K27 | RELAY, TRANSFORMER |
| [illegible] | K55 | RELAY, BLOWER (SUPERMARKET REHEAT) |
| CC04 | S27 | SWITCH, FILTER |
| [illegible] | S42 | SWITCH, OVERLOAD RELAY BLOWER MOTOR |
| DD04 | S52 | SWITCH, AIRFLOW |
| [illegible] | S86 | SWITCH, DEHUMIDISTAT |
| [illegible] | 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 | PRODIGY 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 |
| 8 | REMOVE JUMPER TO INSTALL S149 |
| 9 | EXTERNAL HUMIDITROL CONTACTS |

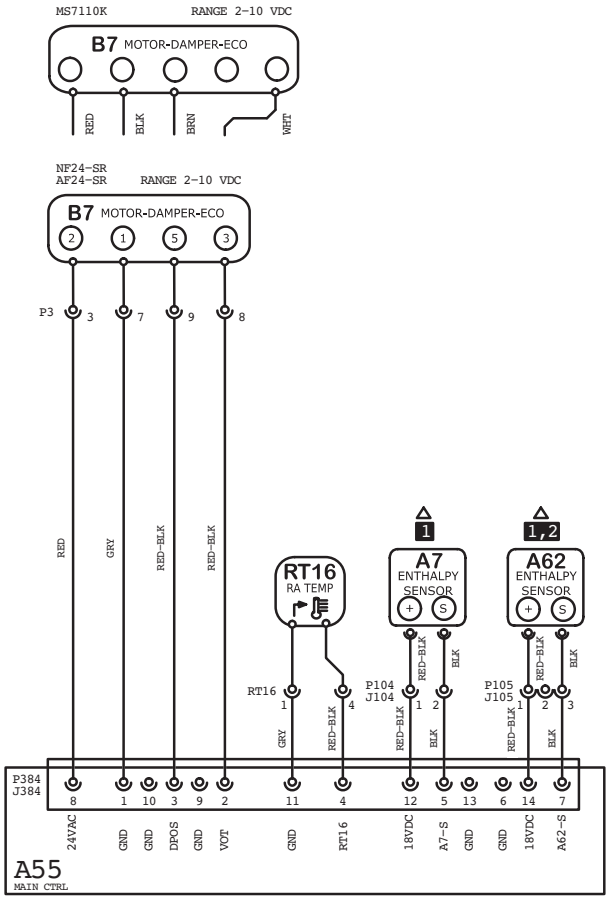


Model: LC, LG, LH, LD Series RTU
Thermostat
Voltage: All Voltages
Supersedes: N/A Form No: 538078-01 Rev: 1

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

WIRING DIAGRAM FLOW

# Economizer




| | 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 |
| DD03 | A62 | SENSOR, ENTHALPY INDOOR |
| BB02 | B7 | MOTOR, DAMPER ECONOMIZER |
| CC05 | RT16 | SENSOR, RETURN AIR TEMP |



Model: LC, LG, LH, LD Series RTU Economizer & Motorized OAD

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

WIRING DIAGRAM FLOW

Voltage: All Voltages

Supersedes: N/A Form No: 538072-01 Rev: 1

**Sequence of Operation LGT156**

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.

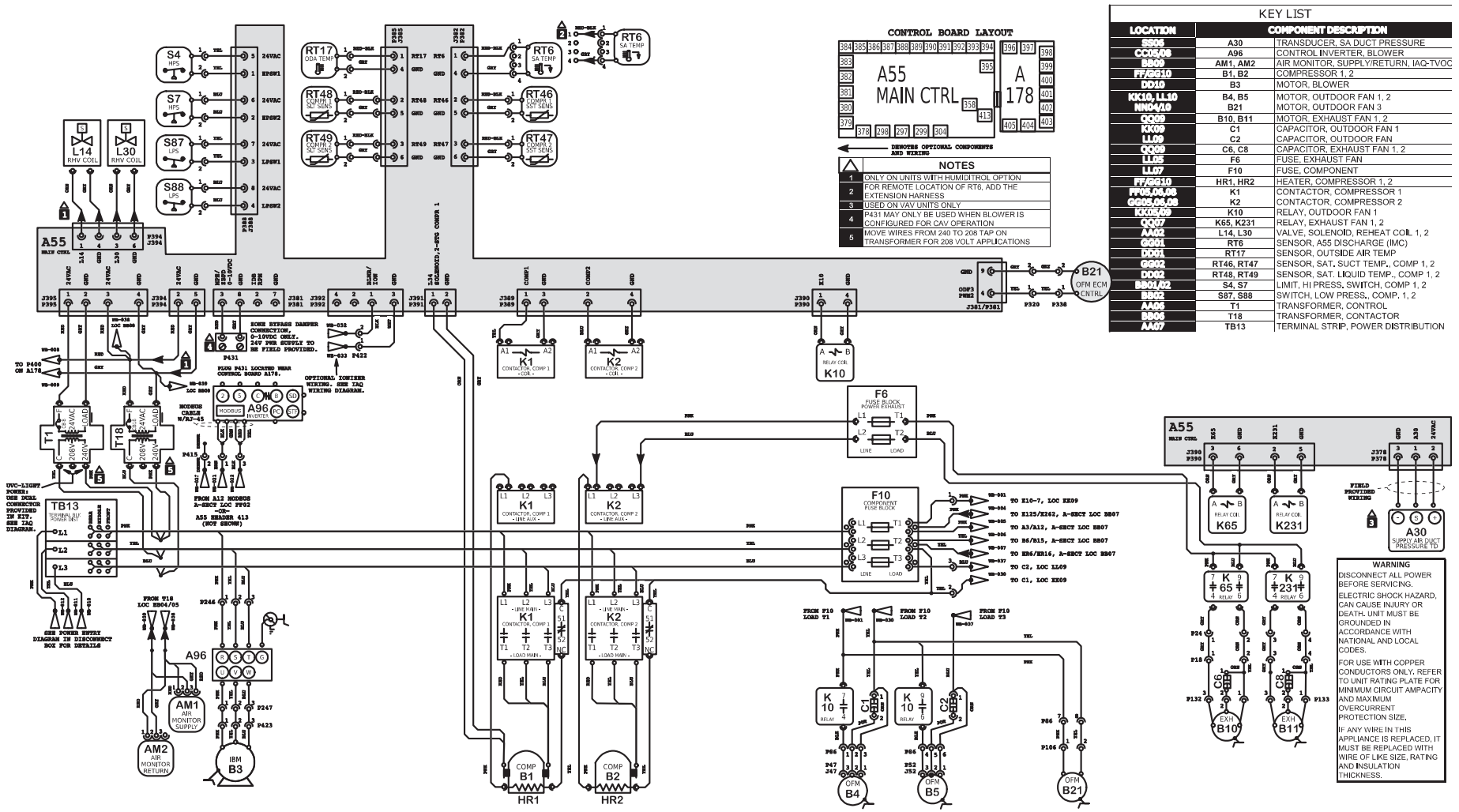
2 - K203-1 N.C. contacts open to de-energize K3 relay coil. K3 contacts open to interrupt power to B3 blower motor through K3 N.O. contacts.

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.

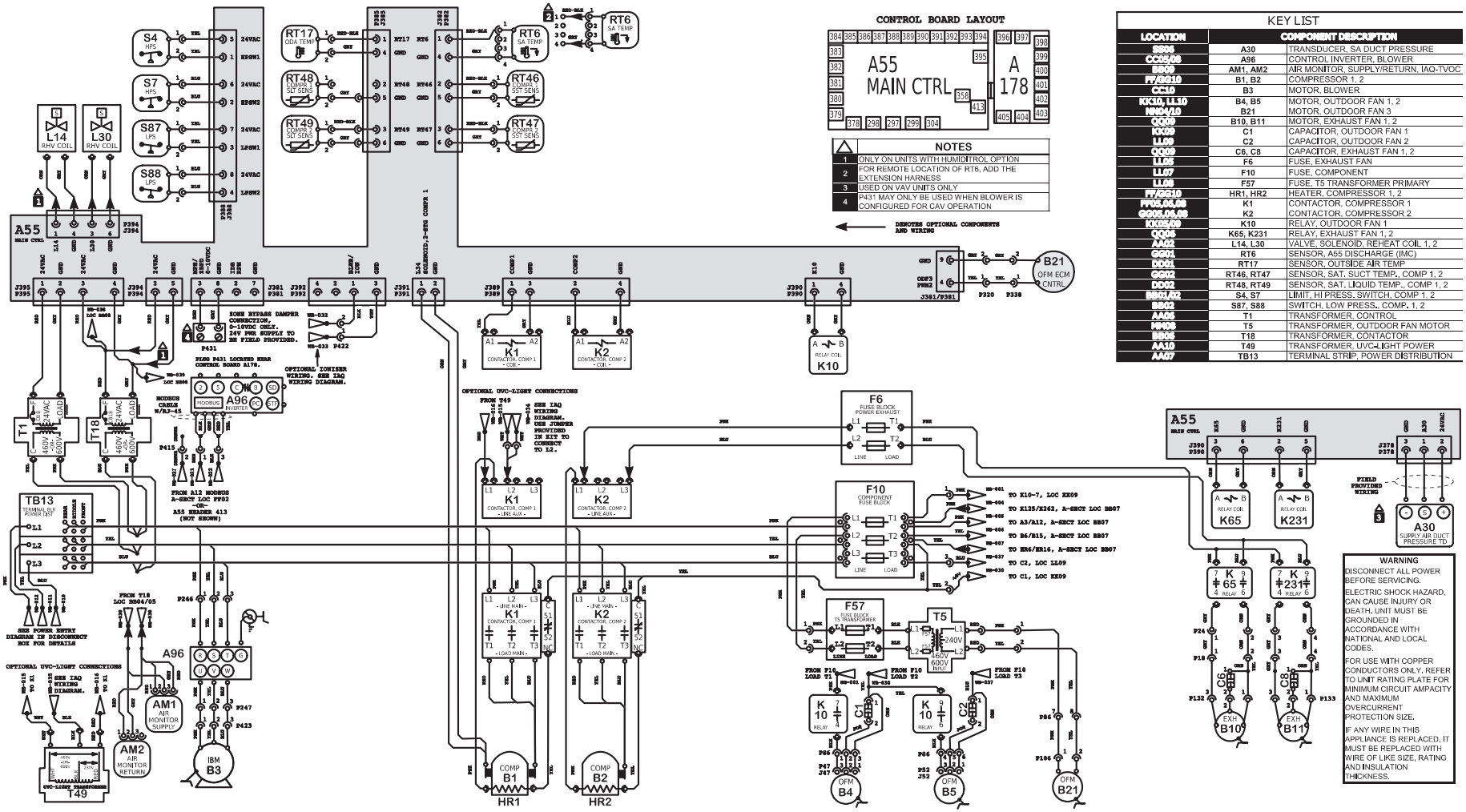
# LGT/LCT156 Y Voltage No By-Pass




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: 538211-0 Rev: 3

## LGT/LCT156 G, J Voltage  No By-Pass



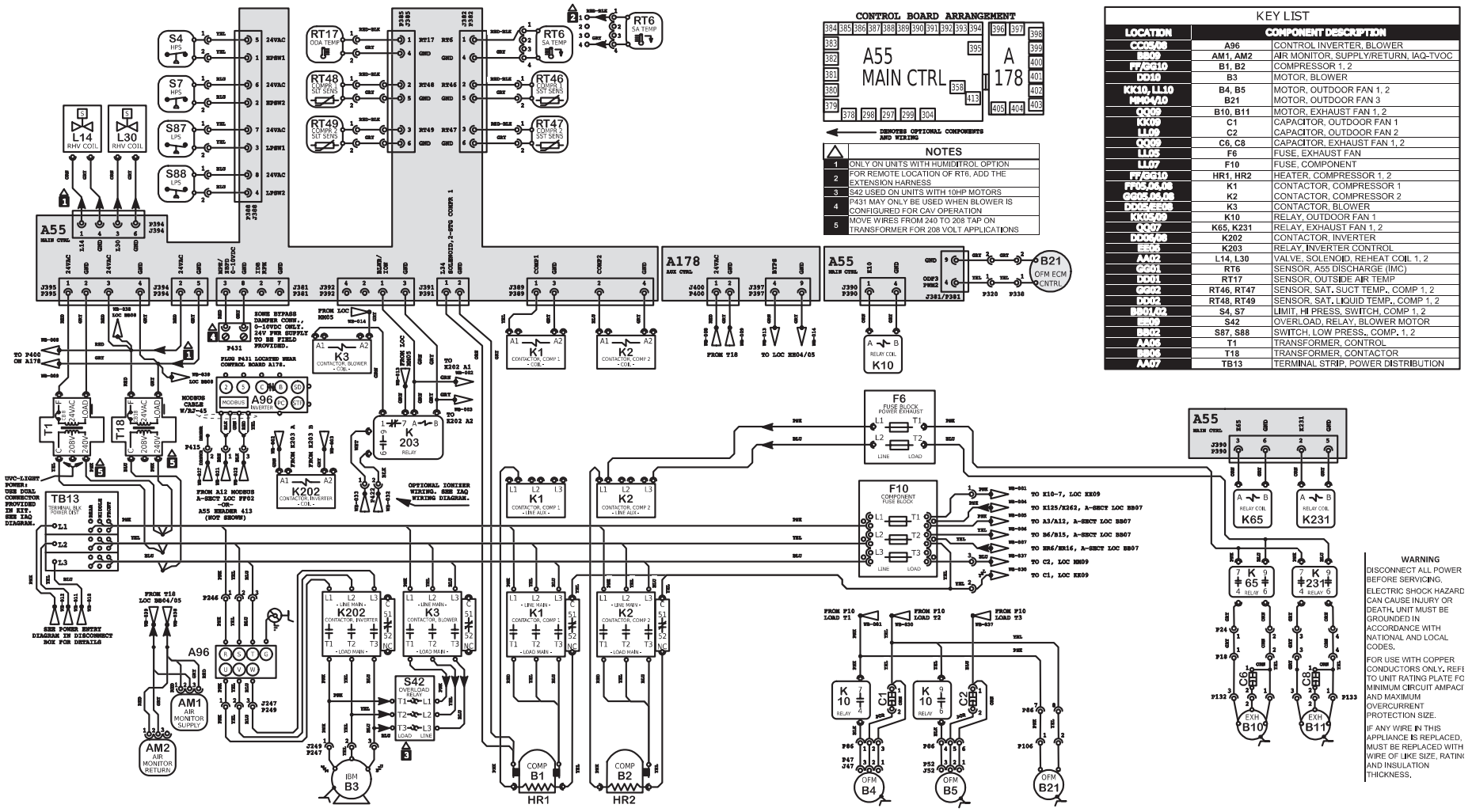

LGT, LCT 156H – G, J–VOLT

COOLING – MSAV NO BYPASS –OR– VAV – 2 COMPRESSORS 3 CONDENSER FANS

Voltage: ..0V/3~/60Hz (G), 575V/3~/60Hz (J)

Supersedes: N/A  Form No: 538209-0  Rev: 3

# LGT/LCT156 Y Voltage With By-Pass



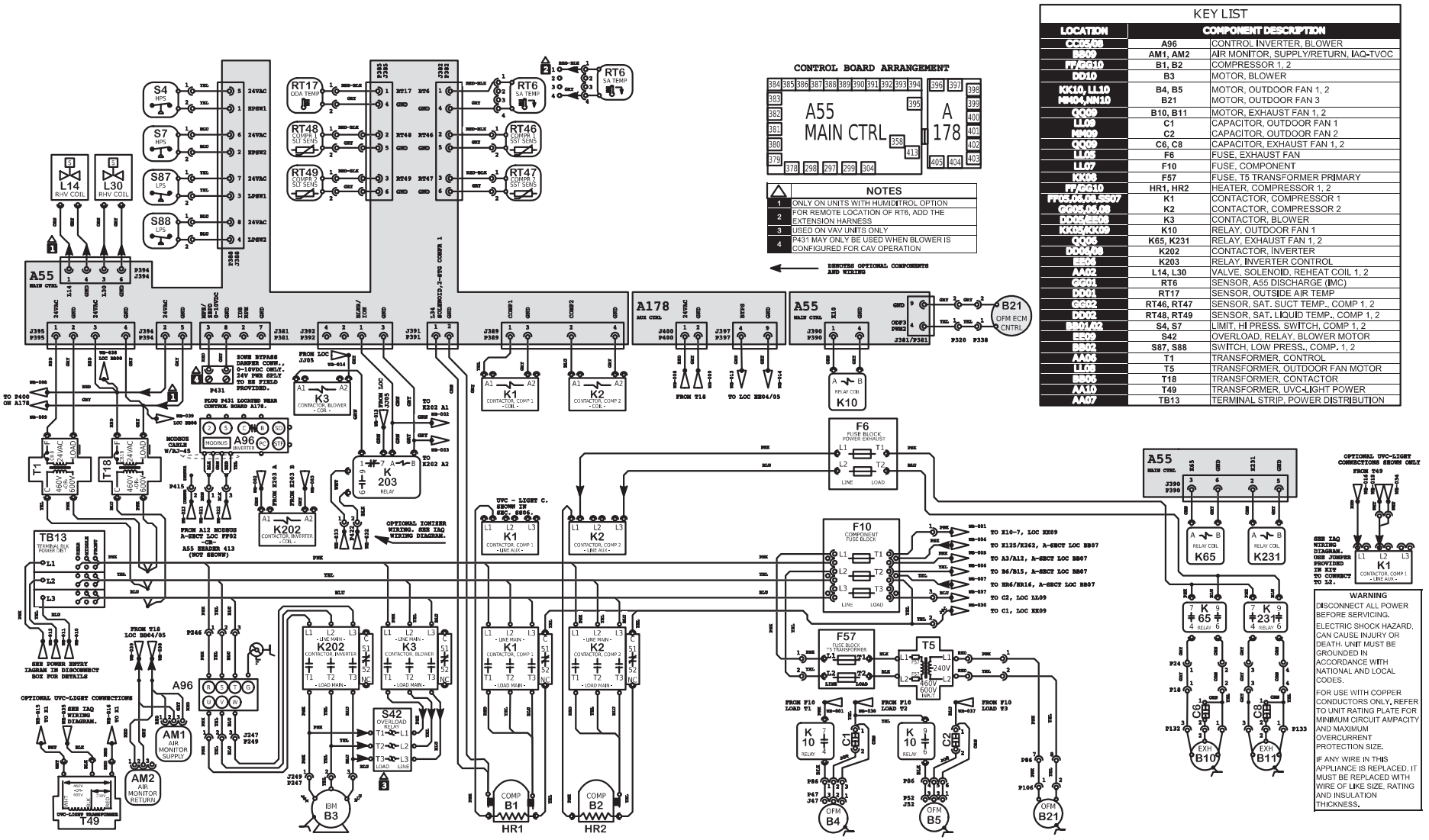

Voltage: 208-240V/3~/60Hz (Y)

LGT, LCT 156H - Y-VOLT

COOLING - MSAV WITH BYPASS - 2 COMPRESSORS 3 CONDENSER FANS

Supersedes: N/A Form No: 538212-0 Rev: 2

# LGT/LCT156 G, J Voltage With By-Pass




KEY LIST

| LOCATION | COMPONENT DESCRIPTION | |
|---|---|---|
| CC04/08 | A96 | CONTROL INVERTER, BLOWER |
| BB06 | AM1, AM2 | AIR MONITOR, SUPPLY/RETURN, IAQ-TVOC |
| F7/GG10 | B1, B2 | COMPRESSOR 1, 2 |
| DD10 | B3 | MOTOR, BLOWER |
| KK10, LL10 MM04,NN10 | B4, B5 B21 | MOTOR, OUTDOOR FAN 1, 2 MOTOR, OUTDOOR FAN 3 |
| QQ09 | B10, B11 | MOTOR, EXHAUST FAN 1, 2 |
| LL09 | C1 | CAPACITOR, OUTDOOR FAN 1 |
| MM09 | C2 | CAPACITOR, OUTDOOR FAN 2 |
| QQ09 | C6, C8 | CAPACITOR, EXHAUST FAN 1, 2 |
| LL05 | F6 | FUSE, EXHAUST FAN |
| LL07 | F10 | FUSE, COMPONENT |
| KK08 | F57 | FUSE, T5 TRANSFORMER PRIMARY |
| F7/GG10 | HR1, HR2 | HEATER, COMPRESSOR 1, 2 |
| FF05,06,08,SS07 GG05,06,08 | K1 K2 | CONTACTOR, COMPRESSOR 1 CONTACTOR, COMPRESSOR 2 |
| DD05/EE08 | K3 | CONTACTOR, BLOWER |
| KK08/KK09 | K10 | RELAY, OUTDOOR FAN 1 |
| QQ06 | 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 |
| LL08 | T5 | TRANSFORMER, OUTDOOR FAN MOTOR |
| BB05 | T18 | TRANSFORMER, CONTACTOR |
| AA10 | T49 | TRANSFORMER, UVC-LIGHT POWER |
| AA07 | TB13 | TERMINAL STRIP, POWER DISTRIBUTION |

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: 538210-0 Rev: 2

**Sequence of Operation LGT180**

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.

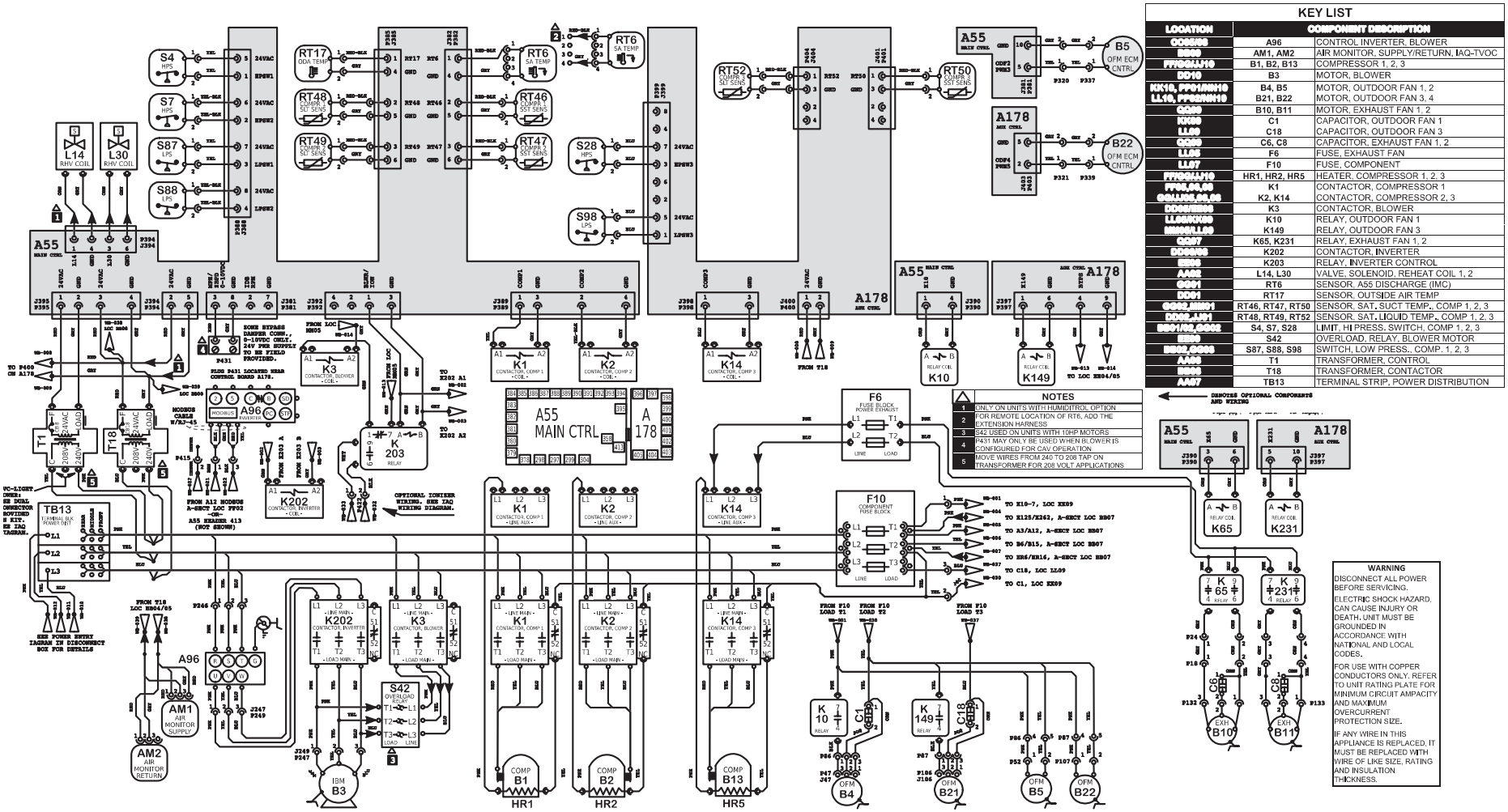
2 - K203-1 N.C. contacts open to de-energize K3 relay coil. K3 contacts open to interrupt power to B3 blower motor through K3 N.O. contacts.

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.

## LGT/LCT180 Y Voltage With By-Pass



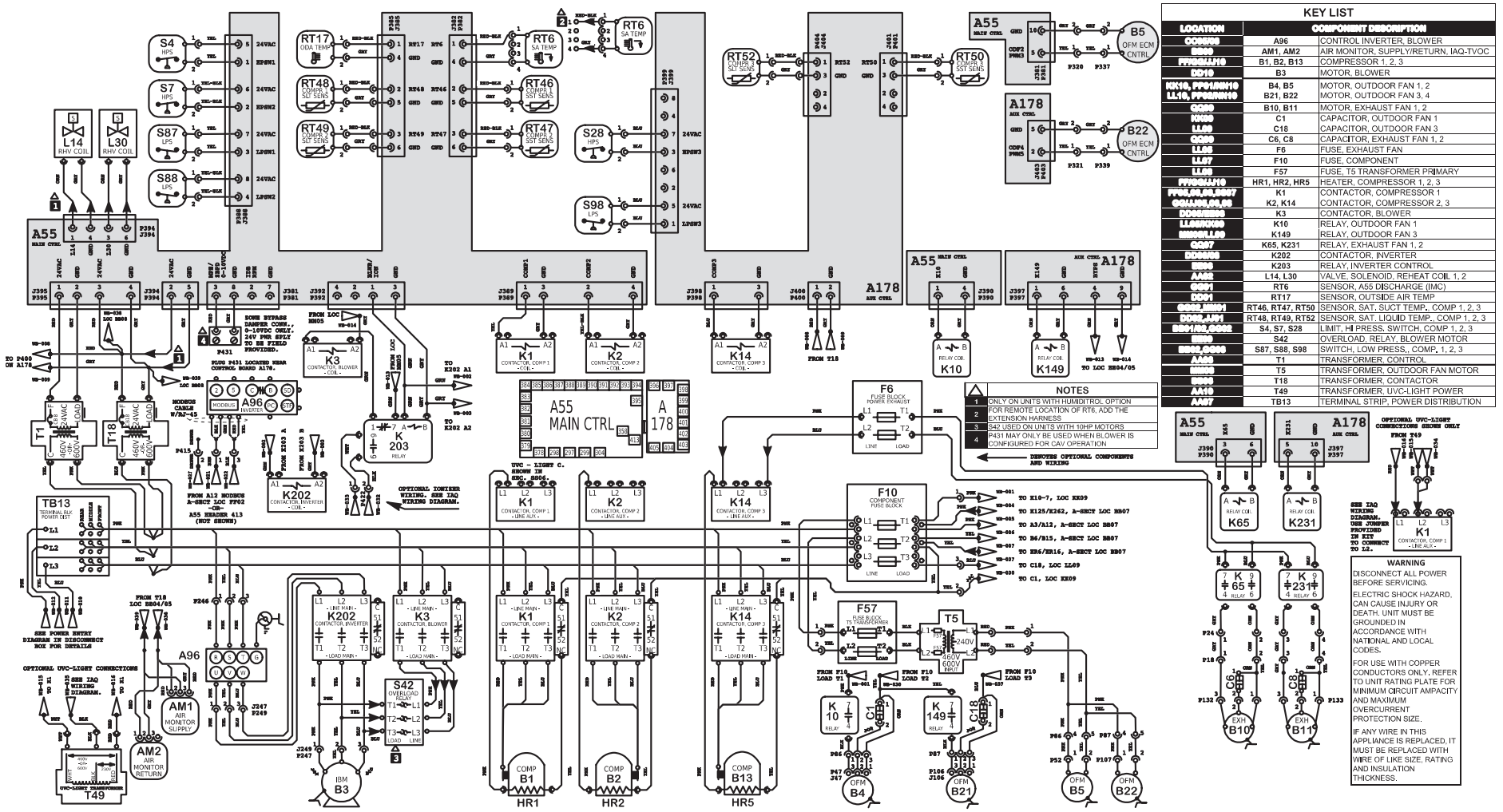

Model: LGT, LCT 180H – Y–VOLT

COOLING – MSAV WITH BYPASS – 3 COMPRESSORS 4 CONDENSER FANS

Voltage: 208–240V/3~/60Hz (Y)

Supersedes: N/A Form No: 538216–0 Rev: 1

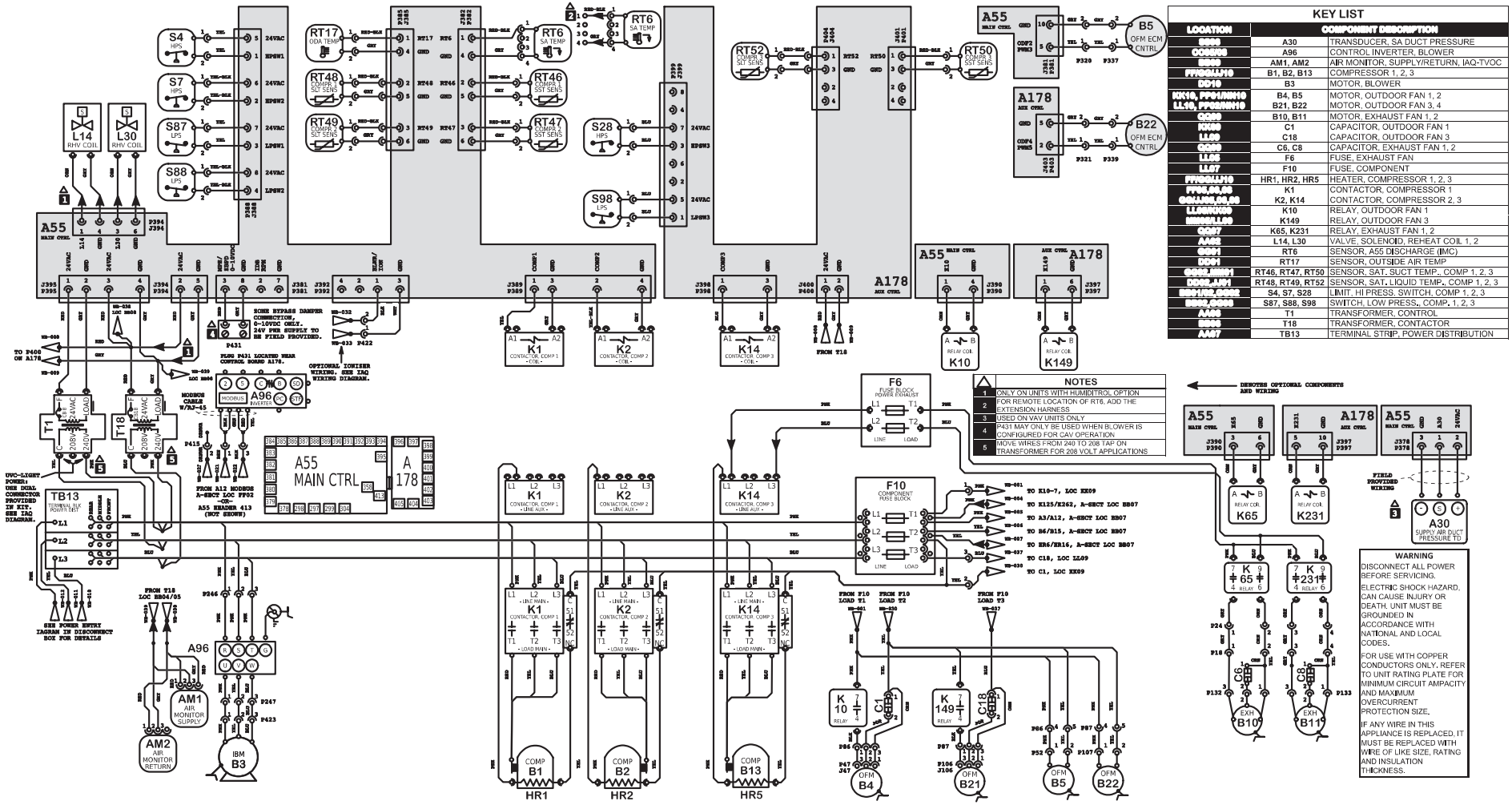
# LGT/LCT180 G, J Voltage With By-Pass




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 538214-0 Rev: 1

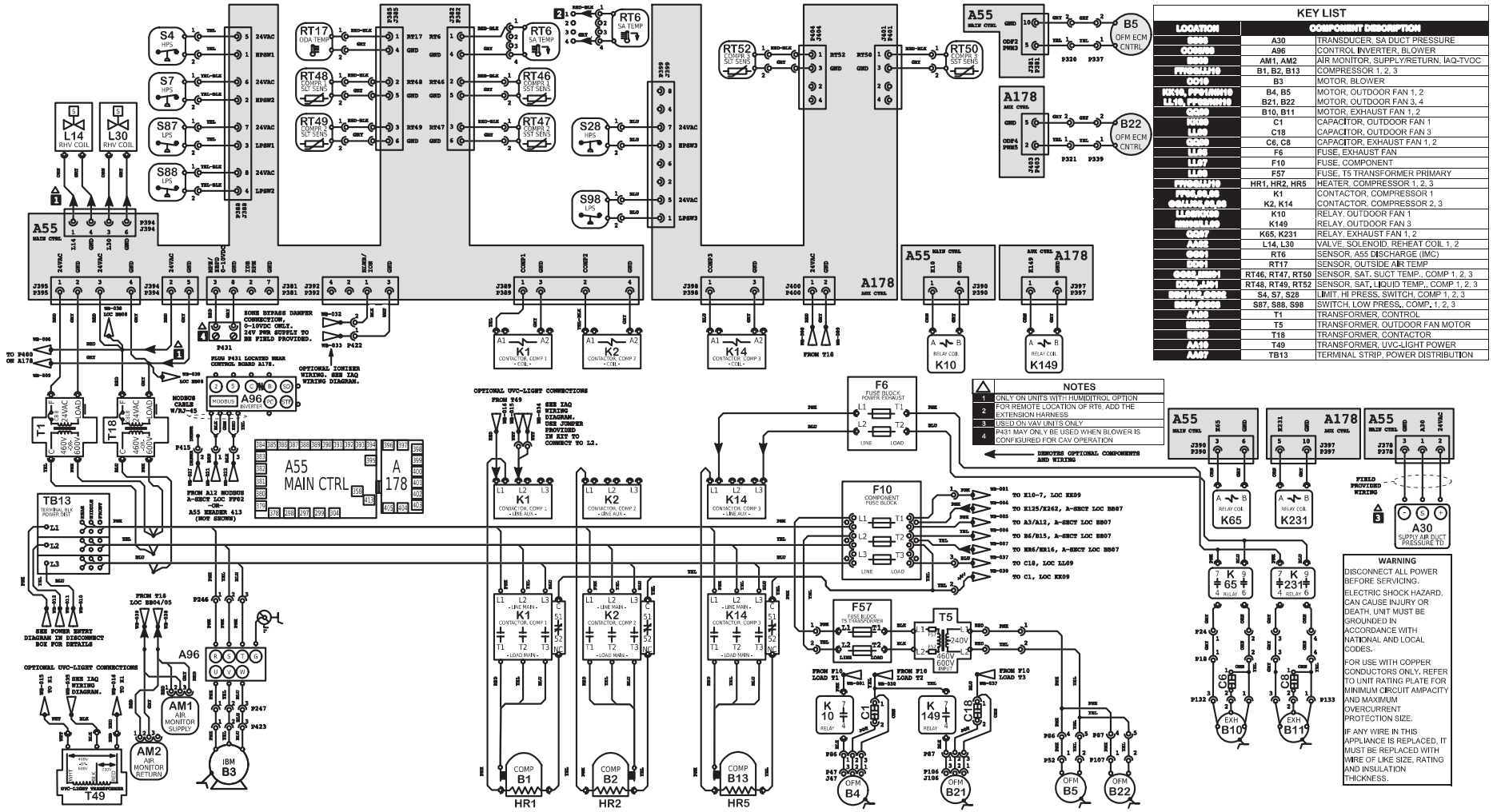
# LGT/LCT180 Y Voltage No By-Pass




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: 538215-0 Rev: 1

# LGT/LCT180 G, J Voltage No By-Pass




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: 538213-0 Rev: 1

**Sequence of Operation LGT210**

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.

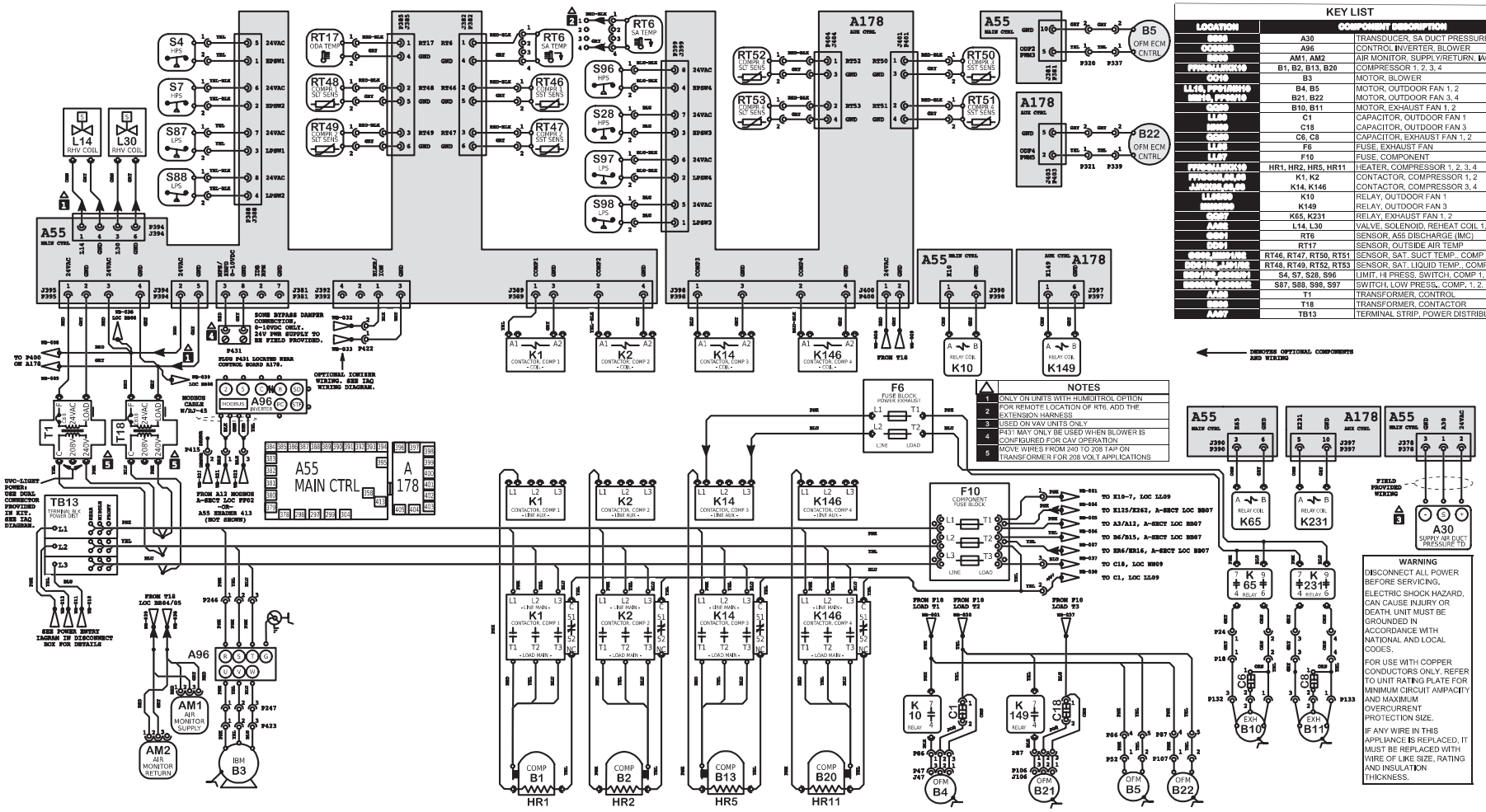
2 - K203-1 N.C. contacts open to de-energize K3 relay coil. K3 contacts open to interrupt power to B3 blower motor through K3 N.O. contacts.

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.

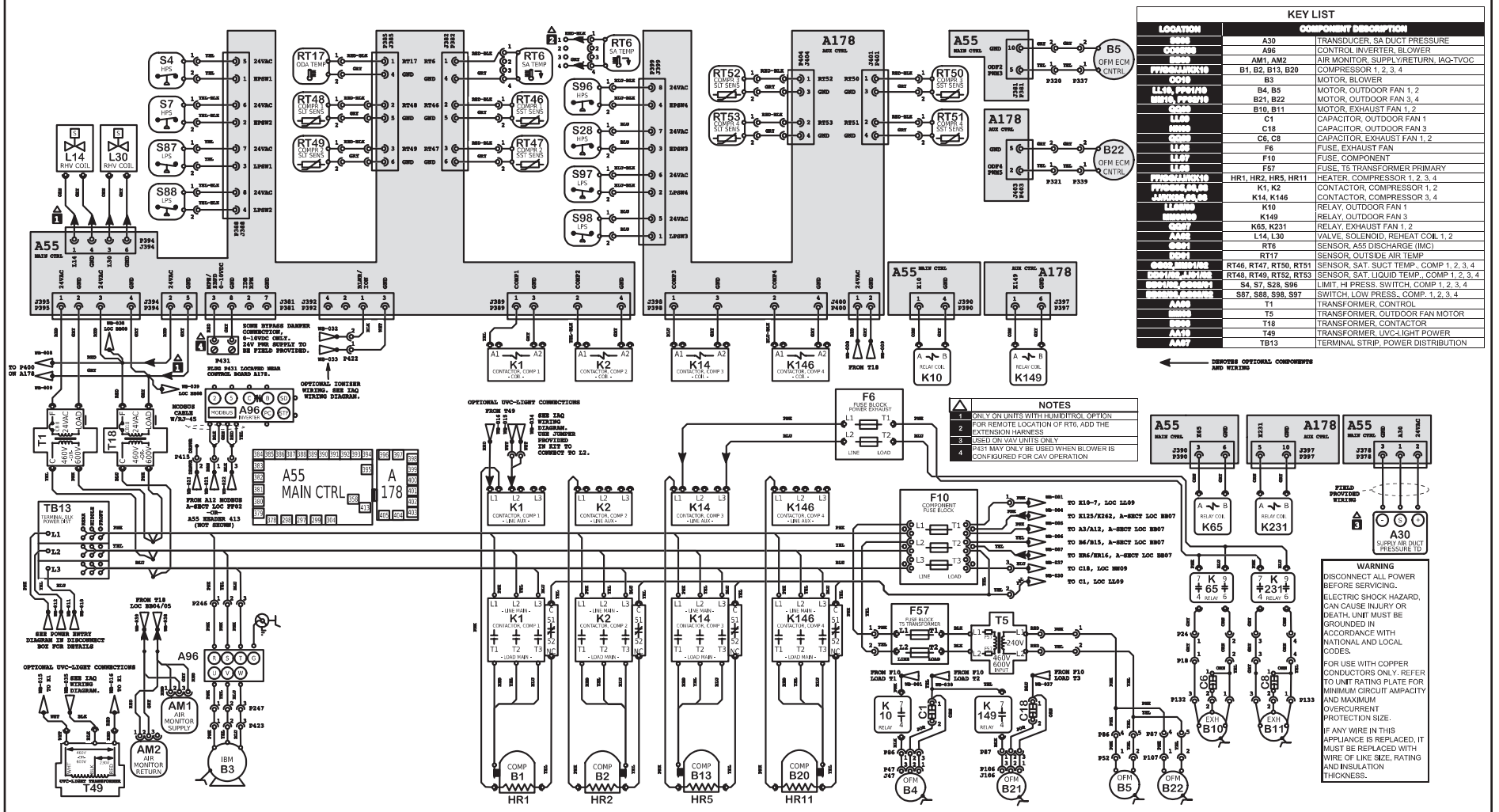
## LGT/LCT210 Y Voltage No By-Pass




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: 538229-0 Rev: 1

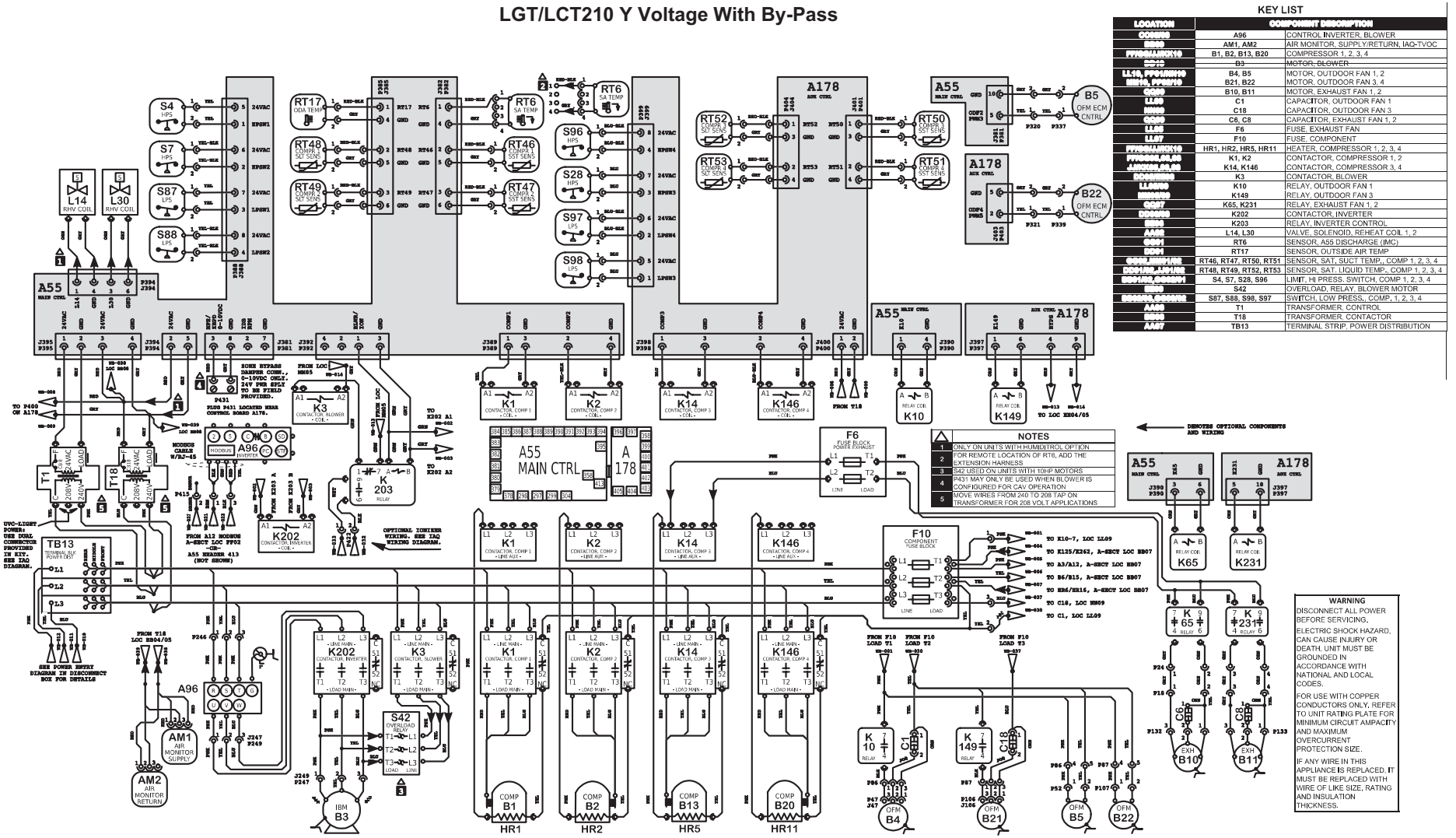
# LGT/LCT210 G, J Voltage No By-Pass




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: 538227-0 Rev: 1

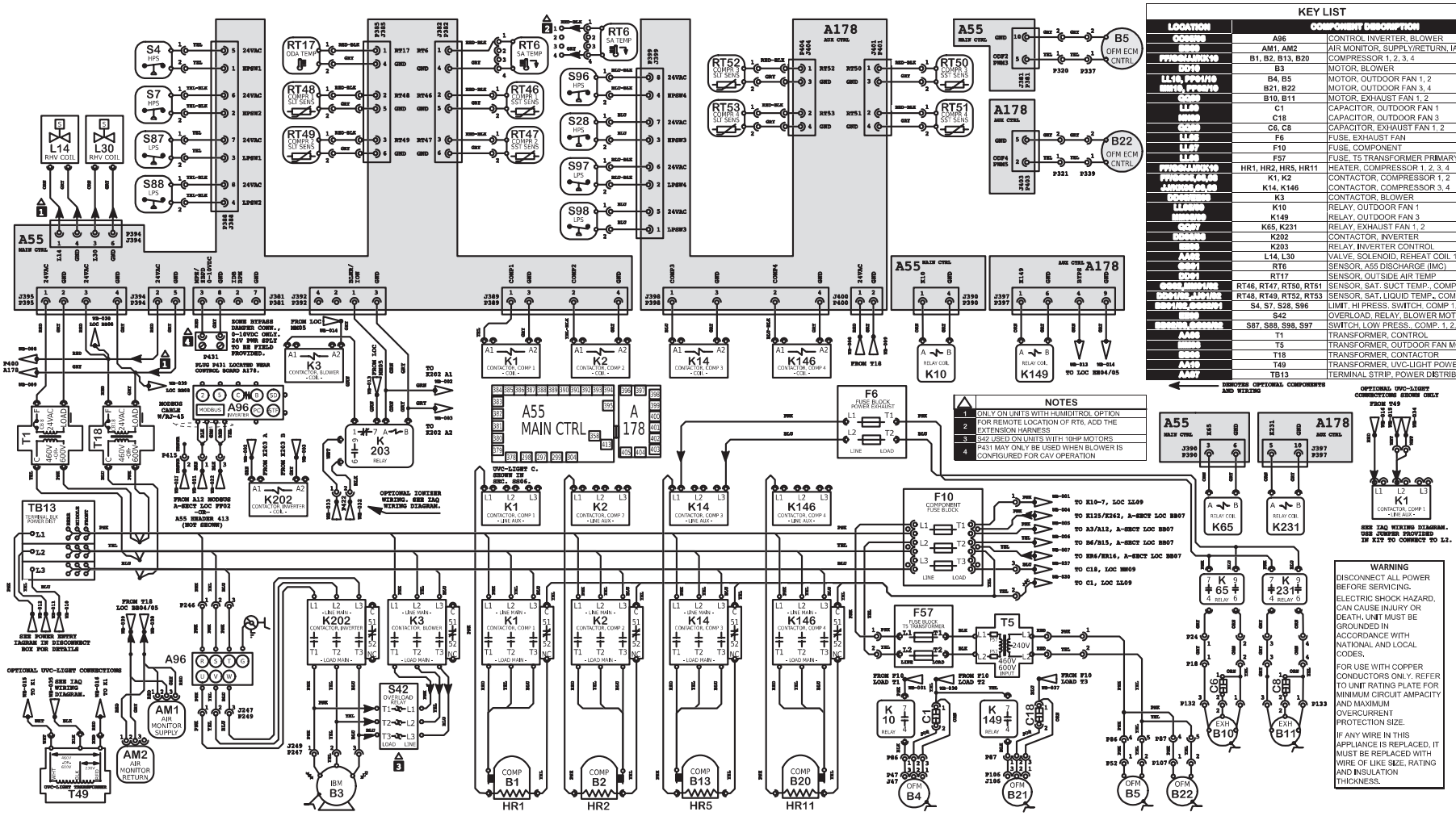
## LGT/LCT210 Y Voltage With By-Pass




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: 538230-0 Rev: 1

## LGT/LCT210 G, J Voltage With By-Pass



| KEY LIST | |
|---|---|
| LOCATION | COMPONENT DESCRIPTION |
| A96 | CONTROL INVERTER, BLOWER |
| AM1, AM2 | AIR MONITOR, SUPPLY/RETURN, IAQ-TVOC |
| B1, B2, B13, B20 | COMPRESSOR 1, 2, 3, 4 |
| B3 | MOTOR, BLOWER |
| B4, B5 | MOTOR, OUTDOOR FAN 1, 2 |
| B21, B22 | MOTOR, OUTDOOR FAN 3, 4 |
| B10, B11 | MOTOR, EXHAUST FAN 1, 2 |
| C1 | CAPACITOR, OUTDOOR FAN 1 |
| C18 | CAPACITOR, OUTDOOR FAN 3 |
| C6, C8 | CAPACITOR, EXHAUST FAN 1, 2 |
| F6 | FUSE, EXHAUST FAN |
| F10 | FUSE, COMPONENT |
| F57 | FUSE, T5 TRANSFORMER PRIMARY |
| HR1, HR2, HR5, HR11 | HEATER, COMPRESSOR 1, 2, 3, 4 |
| K1, K2 | CONTACTOR, COMPRESSOR 1, 2 |
| K14, K146 | CONTACTOR, COMPRESSOR 3, 4 |
| K3 | CONTACTOR, BLOWER |
| K10 | RELAY, OUTDOOR FAN 1 |
| K149 | RELAY, OUTDOOR FAN 3 |
| K65, K231 | RELAY, EXHAUST FAN 1, 2 |
| K202 | CONTACTOR, INVERTER |
| K203 | RELAY, INVERTER CONTROL |
| L14, L30 | VALVE, SOLENOID, REHEAT COIL 1, 2 |
| RT6 | SENSOR, A55 DISCHARGE (IMC) |
| RT17 | SENSOR, OUTSIDE AIR TEMP |
| 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.

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: 538228-0 Rev: 1

**Sequence of Operation LGT240, 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.

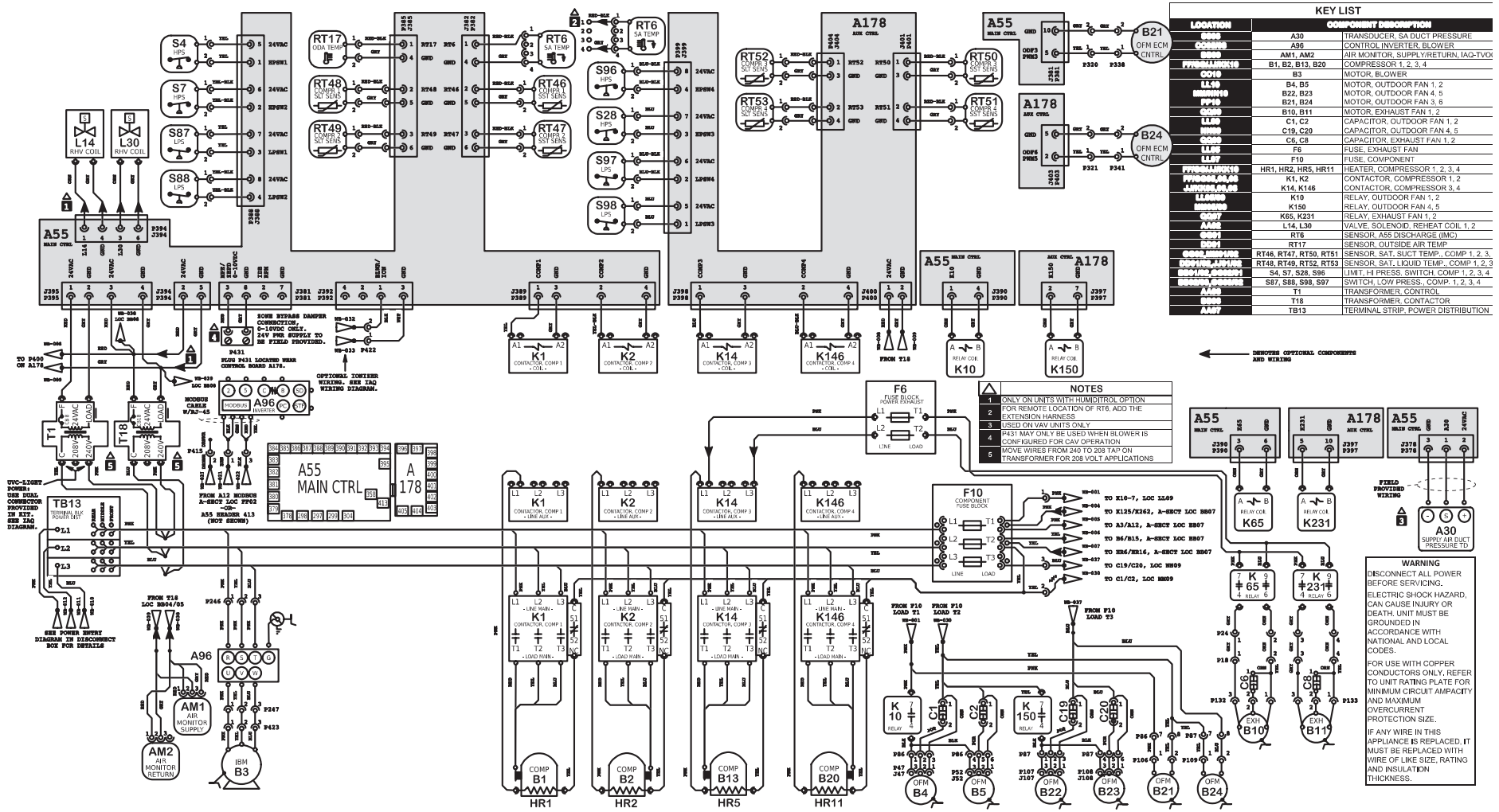
2 - K203-1 N.C. contacts open to de-energize K3 relay coil. K3 contacts open to interrupt power to B3 blower motor through K3 N.O. contacts.

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.

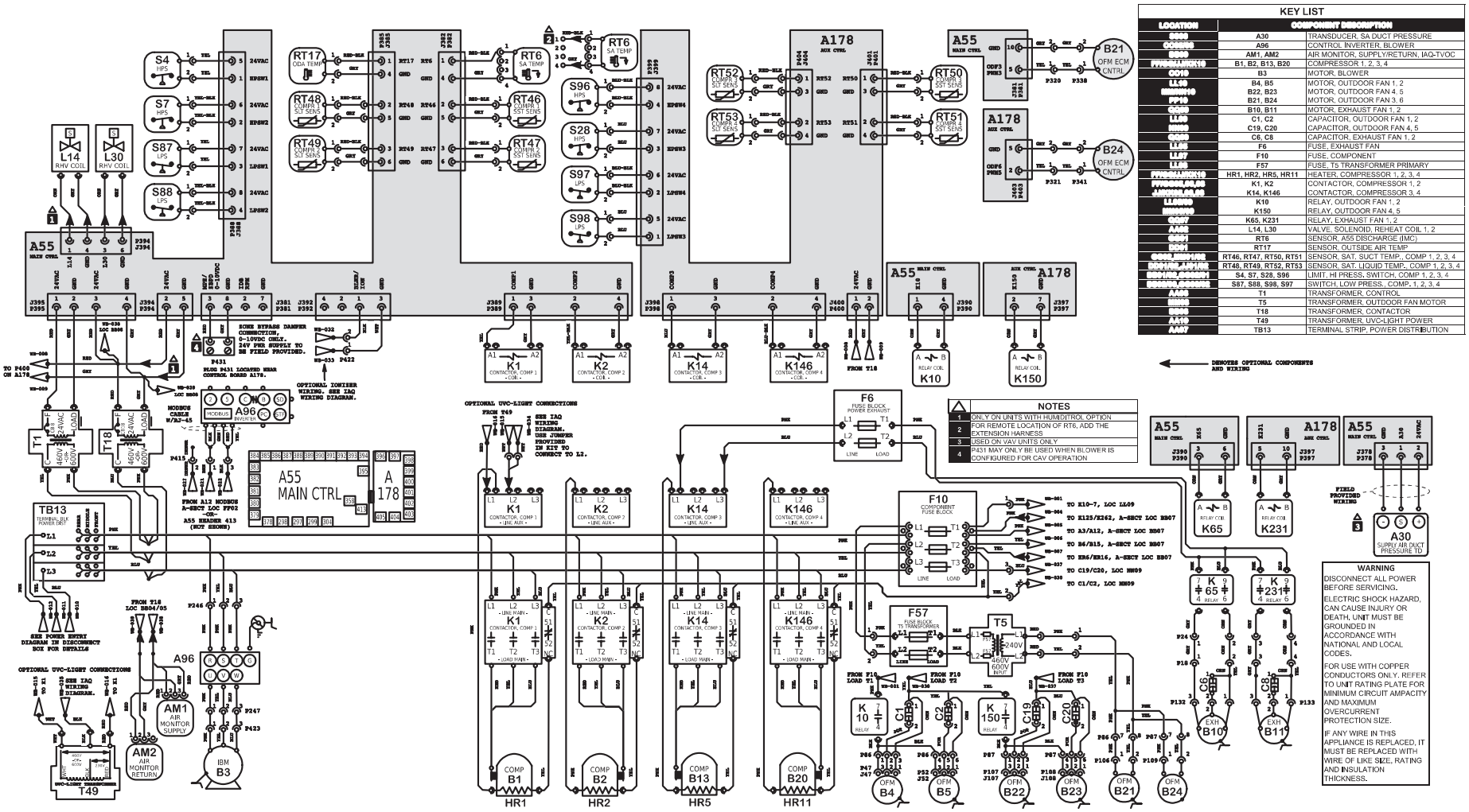
## LGT/LCT240, 300 Y Voltage No By-Pass




LGT, LCT 240H, 300S - Y-VOLT Voltage 208-240V/3~/60Hz (Y)

COOLING - MSAV NO BYPASS -OR- VAV - 4 COMPRESSORS, 6 CONDENSER FANS Form No 538219-0 Rev: 1

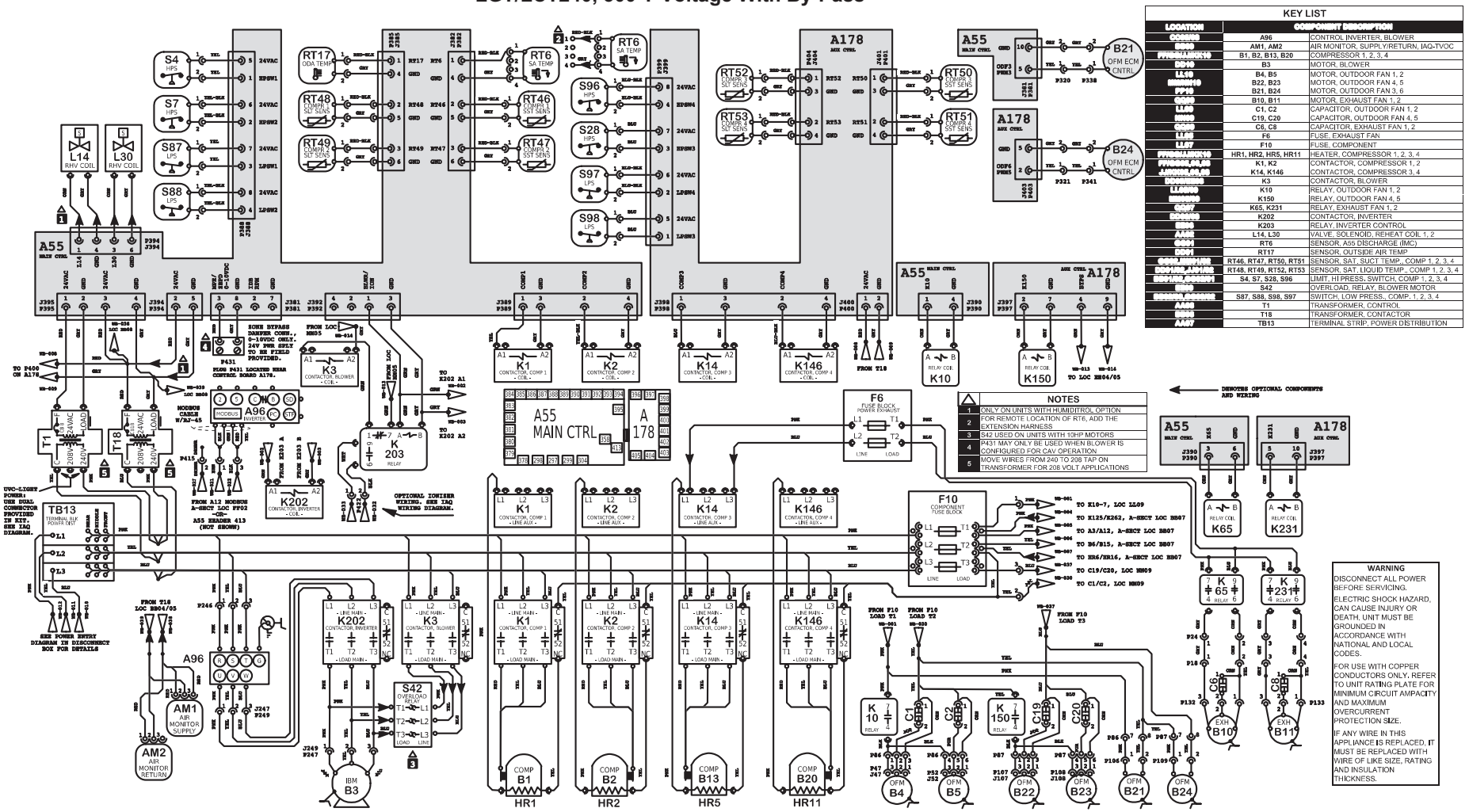
# LGT/LCT240, 300 G, J Voltage No By-Pass




LGT, LCT 240H, 300S – G, J-VOLT COOLING – MSAV NO BYPASS –OR– VAV – 4 COMPRESSORS 6 CONDENSER FANS Supersedes:Form No: 538217-0 Rev: 1

Voltage: 460V/3~/60Hz (G), 575V/3~/60Hz (J)

# LGT/LCT240, 300 Y Voltage With By-Pass

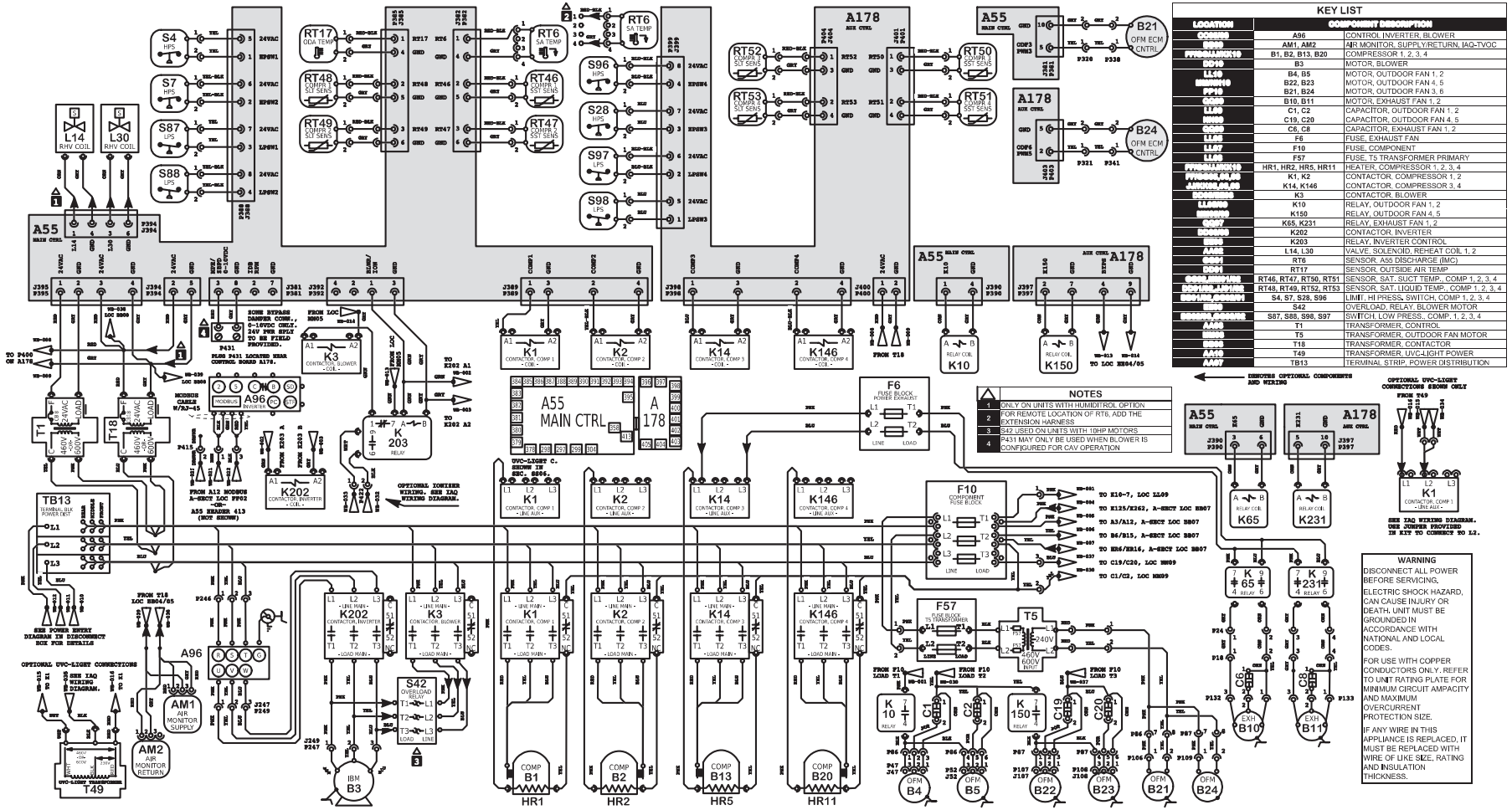



LGT, LCT 240H, 300S – Y–VOLT

COOLING – MSAV WITH BYPASS – 4 COMPRESSORS 6 CONDENSER FANS Voltage: 208–240V/3~/60Hz (Y)

Supersedes:N/A Form No:538220-0 Rev:1

## LGT/LCT240, 300 G, J Voltage With By-Pass




Model: LGT, LCT 240H, 300S - G, J-VOLT

Voltage: 460V/3~/60Hz (G), 575V/3~/60Hz (J)

Supersedes:N/A Form No:538218-0 Rev:1

COOLING - MSAV WITH BYPASS - 4 COMPRESSORS 6 CONDENSER FANS