



SUBMITTAL DATA

Order #: **Date:** 06/19/2025
Project: 7549 Raleigh, NC WALG
Project #:

Submitter: Shawna Miller
UPG National Accounts-York
5005 York Dr.,
Norman , Oklahoma 73069
405-802-7026

Date

06/19/2025

Project Name

7549 Raleigh, NC WALG

Project Number**Client / Purchaser**

Submittal Summary Page

Qty	Tag #	Model # / Material #	Description
1	RTU-3	KJ120N24R2BEGCA2R1	10 Ton, Single Packaged R-454B Air Conditioner, High Efficiency, Two Stage Cooling, 12.2 EER, 240 MBH Input Aluminized Steel, Two Stage Gas Heat, 208/230-3-60 <ul style="list-style-type: none"> • Refrigerant Detection System • Dry Bulb Low Leak Economizer w/Barometric Relief and Hoods (Bottom or Horizontal End Return Only) with Economizer Fault Detection & Diagnostic (Meets ASHRAE 90.1-2013, IECC 2015, California Title 24, AMCA 511). • 3 HP High Static Belt Drive Blower • 2" Pleated Filters (MERV 8) • IntelliSpeed control of the VFD based on stages of cooling (Provides Single Zone VAV Fan Operation as defined by ASHRAE 90.1 section 6.4.3.10) • Smart Equipment Controller including Discharge Air, Return Air, and Outdoor Air Temperature Sensors. BACNet MS/TP, Modbus and N2 Communication Card. • Non-Powered Convenience Outlet • HACR Circuit Breaker/Disconnect • Supply Air Smoke Detector • Phase Monitor • Micro-Channel "all-aluminum" condenser coil, Copper tube/aluminum fin evaporator coil • Composite Drain Pan - Back Connection • Tool-free maintenance with features like hinged doors for all-access panels, slide-out blower and blower motor tray
1	RTU-3	2AQ04700524	CO ² Space Sensor - Wall Mount Accessory
1	RTU-3	2EC0402	Kit, Dual Enthalpy Field Installed (Includes two humidity sensors)

Equipment start-up and commissioning by a factory trained technician is recommended.
 Contact your supplying distributor or sales representative for additional information & guidance.



WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

Project Name: **7549 Raleigh, NC WALG**

Unit Model #: **KJ120N24R2BEGCA2R1**

Quantity: **1** Tag #: **RTU-3**

System: **KJ120N24R2BEGCA2R1**

Cooling Performance

Total gross capacity	126.7 MBH
Sensible gross capacity	89.5 MBH
Total net capacity	116.6 MBH
Sensible net capacity	79.4 MBH
Efficiency (at ARI)	12.20 EER
Integrated eff. (at ARI)	15.00 IEER
Ambient DB temp.	95.0 °F
Entering DB temp.	80.0 °F
Entering WB temp.	67.0 °F
Evap Coil Leaving DB temp.	59.3 °F
Evap Coil Leaving WB temp.	57.0 °F
Unit Leaving DB temp.	61.6 °F
Unit Leaving WB temp.	57.9 °F
Leaving air temp dew point	55.5 °F
Power input (w/o blower)	8.80 kW
Sound power	89 dB(a)

Refrigerant

Refrigerant type	R-454B
Sys1	6 lb 8 oz
Sys2	6 lb 12 oz

Gas Heating Performance

Entering DB temp.	60 °F
Heating output capacity (Max)	194.0 MBH
Supply air	4000 cfm
Heating input capacity (Max)	240 MBH
Leaving DB temp.	104.9 °F
Air temp. rise	44.9 °F
SSE	81.0 %
Stages	2

Supply Air Blower Performance

Supply air	4000 cfm
Ext. static pressure	1.0 IWG
Addl. Unit Losses (Options/Accessories)	0.58 IWG
Blower speed	1270 rpm
Max BHP of Motor (including service factor)	3.45 HP
Duct location	Bottom
Motor rating	3.00 HP
Actual required BHP	3.18 HP
Power input	2.96 kW
Elevation	0 ft
Drive type	BELT
Requires field-supplied drive	true

Electrical Data

Power supply	208-3-60	230-3-60
Unit min circuit ampacity	54.8 A	54.8 A
Unit max over-current protection	70 A	70 A

Dimensions & Weight

Hgt	51 in	Len	89 in	Wth	59 in
Weight with factory installed options	1275 lb				

Clearances

Right	12 in	Front	48 in	Rear	36 in
Top	72 in	Bottom	0 in	Left	36 in

Note: Please refer to the tech guide for listed maximum static pressures



10 Ton

- York Sun Pro units are manufactured at an ISO 9001 registered facility and each rooftop is completely computer-run tested prior to shipment.

Product Features

- All units are manufactured at an ISO 9001 registered facility and each rooftop is completely computer-run tested prior to shipment.

Unit Features

- Refrigerant Detection System (RDS) is Factory Installed
- Two Stage Cooling
- 240 MBH Input Aluminized Steel, Two Stage Gas Heat
- Full perimeter base rails with built in rigging capabilities
- Unit Cabinet Constructed of Powder Painted Steel, Certified At 750 Hours Salt Spray Test (ASTM B-117 Standards)
- Scroll Compressor[s]
- Dry Bulb Low Leak Economizer w/Barometric Relief and Hoods (Bottom or Horizontal End Return Only) with Economizer Fault Detection & Diagnostic (Meets ASHRAE 90.1-2013, IECC 2015, California Title 24, AMCA 511).
- Slide-out Blower/3 HP Belt Drive Motor Assembly
- Unit Ships with 2" Pleated Filters (MERV 8)
- Solid Core Liquid Line Filter Driers
- Replacement Filters: 4 - (24" x 20")
- Non-Powered Convenience Outlet
- HACR Circuit Breaker/Disconnect
- Single Point Power Connection
- Through-the-Curb and Through-the-Base Utility Connections
- Short Circuit Current: 5kA RMS Symmetrical
- Supply Air Smoke Detector
- Micro-Channel "all-aluminum" condenser coil, Copper tube/aluminum fin evaporator coil
- Composite Drain Pan - Back Connection
- Tool-free maintenance with features like hinged doors for all-access panels, slide-out blower and blower motor tray

BAS Controller

- IntelliSpeed control of the VFD based on stages of cooling. Provides Single Zone VAV Fan Operation as defined by ASHRAE 90.1 section 6.4.3.10.

Standard Unit Controller: Smart Equipment Control Board

- Safety Monitoring - Monitors the High and Low-Pressure Switches, the Freezestats, the Gas Valve, if Applicable, and the Temperature Limit Switch on Gas and Electric Heat Units. The Unit Control Board will Alarm on Ignition Failures, Safety Lockouts and Repeated Limit Switch Trips.

Warranty

- One (1) Year Limited Warranty on the Complete Unit
- Five (5) Year Warranty - Compressors and Electric Heater Elements
- Ten (10) Year Limited Warranty - Aluminized Steel Heat Exchanger



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Unit Model #: KJ120N24R2BEGCA2R1

Quantity: 1 Tag #: RTU-3

System: KJ120N24R2BEGCA2R1

Additional Electrical Data

Power supply	208-3-60
Unit min circuit ampacity	54.8 A
Unit max over-current protection	70 A
Min Voltage	187 V
Max Voltage	252 V
Comp #1 RLA	16.0
Comp #1 LRA	156.4
Comp #2 RLA	16.0
Comp #2 LRA	156.4
Indoor Mtr Voltage	208-3-60
Indoor Mtr FLA	13.2
Outdoor Mtr Qty	2
Outdoor Fan Voltage	208-1-60
OD Fan Mtr FLA (ea.)	2.8
Power Ex Mtr Qty (if applicable)	1
Powered Ex Voltage(if applicable)	208-1-60
Power Ex Mtr FLA (ea) (if applicable)	5.5
Combustion Mtr Qty	1
Combustion Motor Voltage	208/230-1-60
Combustion Mtr FLA (ea)	0.5

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RDS SUMMARY (Lowest Elevation Floor Being Served)**JOBSITE INPUTS****Refrigerant Detection System (RDS) Not Required.**

Room with the Lowest Discharge Height	0	ft
Smallest RDS Required Room Area on the Lowest Floor	N/A	ft ²
Min. Allowed Smallest Room Area without an RDS	N/A	ft ²
Total Applied Area	0	ft ²
Min. Allowed Total Applied Area	N/A	ft ²
Min. CFM when RDS is enabled	N/A	cfm
Min. System Exhaust (External to Unit)	N/A	cfm
Total Largest Circuit Refrigerant Charge	0	lb
Altitude	0	ft



R454B is a mildly flammable refrigerant. Unit installation must be in compliance with UL 60335-2-40 and installation and operations manual available on Solution Navigator, DS Solutions app and shipped with the unit.

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Quantity: 1 Tag #: RTU-3

System: KJ120N24R2BEGCA2R1

Factory Installed Options

KJ120N24R2BEGCA2R1

Equipment Options	Option(s) Selected
Product Category :	KJ Single Packaged R-454B Air Conditioner, High Efficiency 12.2 EER
Nominal Cooling Capacity :	120 10 Ton Two Stage Cooling
Heat Type and Nominal Heat Capacity :	N24 240 MBH Input Aluminized Steel, Two Stage Gas Heat
Blower Option :	R 3 HP High Static Belt Drive Blower IntelliSpeed control of the VFD based on stages of cooling (Provides Single Zone VAV Fan Operation as defined by ASHRAE 90.1 section 6.4.3.10)
Voltage :	2 208/230-3-60
Outside Air Option :	B Dry Bulb Low Leak Economizer w/Barometric Relief and Hoods (Bottom or Horizontal End Return Only) with Economizer Fault Detection & Diagnostic (Meets ASHRAE 90.1-2013, IECC 2015, California Title 24, AMCA 511).
Service Options :	E Refrigerant Detection System Non-Powered Convenience Outlet HACR Circuit Breaker/Disconnect
Sensor Options :	G Supply Air Smoke Detector
Controls :	C Smart Equipment Controller including Discharge Air, Return Air, and Outdoor Air Temperature Sensors. BACNet MS/TP, Modbus and N2 Communication Card.
Refrigeration :	A Micro-Channel "all-aluminum" condenser coil, Copper tube/aluminum fin evaporator coil
Additional Options :	2 2" Pleated Filters (MERV 8) Phase Monitor
Cabinet Options :	R Composite Drain Pan - Back Connection Tool-free maintenance with features like hinged doors for all-access panels, slide-out blower and blower motor tray
Product Generation :	1

Field Installed Accessories

1BD0408 - Burglar Bars (32.0 lbs)

1CG0420 - Coil Guard (27.0 lbs)

1CV0403 - Concentric Diffuser, Flush Mount, 20RD

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- | | | |
|---|--|--|
| <ul style="list-style-type: none"> <input type="radio"/> 1CV0404 - Concentric Diffuser, Flush Mount, 18X28 <input type="radio"/> 1CV0405 - Concentric Diffuser, Flush Mount, 18X32 <input type="radio"/> 1CV0412 - Concentric Diffuser, Side Discharge, 20RD <input type="radio"/> 1CV0413 - Concentric Diffuser, Side Discharge, 18X28 <input type="radio"/> 1CV0414 - Concentric Diffuser, Side Discharge, 18X32 <input type="radio"/> 1CV0420 - Concentric Diffuser, Specialty, 24X24 <input type="radio"/> 1CV0426 - Concentric Diffuser, Specialty, 24X24 <input type="radio"/> 1FE0412 - Flue Exhaust Extension Kit (14.0 lbs) <input type="radio"/> 1FF0414 - 2" Only Metal Filter Frame Kit (16.0 lbs) <input type="radio"/> 1HA0425 - High Altitude Kit with Propane Conversion - For applications between 2000 and 6000 feet altitude (1.0 lbs) <input type="radio"/> 1HA0448 - High Altitude Kit for Natural Gas - For applications between 2000 and 6000 feet altitude (1.0 lbs) <input type="radio"/> 1HG0411 - Hail Guard Kit-Diamond Pattern (37.0 lbs) <input type="radio"/> 1HG0432 - Hail Guard Kit-Provent Style (25.0 lbs) <input type="radio"/> 1NP0463 - Natural Gas to Propane Conversion Kit (2-Stage) (1.0 lbs) <input type="radio"/> 1RC0470 - Roof Curb - 8" High, Flat, Uninsulated, Full Perimeter (Shipped Knocked Down) (135.0 lbs) <input type="radio"/> 1RC0471 - Roof Curb - 14" High, Flat, Uninsulated, Full Perimeter (Shipped Knocked Down) (135.0 lbs) <input type="radio"/> 1RC0472 - Roof Curb, Transition-Sunline 7.5T thru 12.5T to Pro 3.0T thru 12.5T (Shipped Assembled) (200.0 lbs) <input type="radio"/> 1RC0476 - Roof Curb - 24" High, Flat, Uninsulated, Full Perimeter (Shipped Knocked Down) (135.0 lbs) <input type="radio"/> 1WC0412 - Wooden Crate (445.0 lbs) <input type="radio"/> 2AP0403 - Air Proving Switch <input checked="" type="radio"/> 2AQ04700524 - CO² Space Sensor - Wall Mount Accessory (5.0 lbs) <input type="radio"/> 2AQ04700624 - CO² Unit Mount Accessory (4.6 lbs) | <ul style="list-style-type: none"> <input type="radio"/> 2EC0401 - Kit, Single Enthalpy Field Installed (1.0 lbs) <input checked="" type="radio"/> 2EC0402 - Kit, Dual Enthalpy Field Installed (Includes two humidity sensors) (1.0 lbs) <input type="radio"/> 2LA04702412 - Low Ambient Kit - ICM 333 (2.2 lbs) <input type="radio"/> 2PE04704706 - Power Exhaust 230V without Baro Relief Downflow or Horizontal (19.0 lbs) <input type="radio"/> 2SD04700924 - Smoke Detector Kit w/ Mounting Hardware for Return Air (Downflow Only) Only (10.0 lbs) <input type="radio"/> S1-02815208000 - Blower Sheave for 8.5 and 10 Ton High Static Field Installed Drive (2.8 lbs) <input type="radio"/> S1-03102529000 - Non-Networking Wall Sensor – Allows remote sensing and control from single or multiple zones. (0.1 lbs) <input type="radio"/> S1-03102529004 - Non-Networking Wall Sensor with Over-ride button – Allows remote sensing and control from single or multiple zones. Override allows setpoint to be overridden for 2 hour time period. (0.2 lbs) <input type="radio"/> S1-ADDWIRE - Add-a-Wire allows 5-wire thermostats to use only 4 wires. (0.3 lbs) <input type="radio"/> S1-CTS DTS - CTS Wired Temperature Sensor for thermostat Duct *Also works for LX Series (0.3 lbs) <input type="radio"/> S1-CTS HTS - CTS Hardwired Temperature Sensor for CTS Thermostats *Works with LX series as well (0.2 lbs) <input type="radio"/> S1-CTS PLATE - Wall Plate for CTS Thermostats *Also works for new platform LX series models below (0.0 lbs) <input type="radio"/> S1-CTS WFTS - CTS Temperature Sensor with WiFi for CTS Thermostats *Also works with LX Series (0.1 lbs) <input type="radio"/> S1-LC-TMR100-0 - Transparent Wireless MS/TP Router, Coordinator, or Repeater. Wireless mesh network up 1,000 ft. line-of-sight (250 ft. recommended) (55.1 lbs) <input type="radio"/> S1-LC-TMRKIT-0 - NEMA 3R panel with liquid-tight conduit for mounting TMR outdoors. TMR sold separately. (0.3 lbs) | <ul style="list-style-type: none"> <input type="radio"/> S1-LXLOCK - Locking Ring For LX-Series Thermostats (0.4 lbs) <input type="radio"/> S1-LXPLATE - Wall Plate For LX-Series Thermostats (0.0 lbs) <input type="radio"/> S1-LXWFM - For LX Series Thermostats - WiFi Communication (0.1 lbs) <input type="radio"/> S1-NSB8BHN041-0 - Wall Temperature and 3% Relative Humidity Combined Sensor, No Display, WHITE, NO JCI LOGO, NS8000 Series (0.4 lbs) <input type="radio"/> S1-NSB8BHN141-0 - Wall Temperature and 3% Relative Humidity Combined Sensor, Warmer/Cooler Display, WHITE, NO JCI LOGO, NS8000 Series (0.4 lbs) <input type="radio"/> S1-NSB8BHN240-0 - Zone Temperature Sensor. +3% RH, LCD DISPLAY, LOCAL SETPOINT CONTROL , WHITE, WITH JCI LOGO (0.4 lbs) <input type="radio"/> S1-NSB8BHN241-0 - Zone Temperature Sensor. +3% RH, LCD DISPLAY, LOCAL SETPOINT CONTROL , WHITE, NO LOGO (0.4 lbs) <input type="radio"/> S1-NSB8BPN240-0 - Wall Temperature and 2% Relative Humidity Combined Sensor, Full Display, WHITE, JCI LOGO, NS8000 Series (0.4 lbs) <input type="radio"/> S1-NSB8BPN241-0 - Wall Temperature and 2% Relative Humidity Combined Sensor, Full Display, WHITE, NO JCI LOGO, NS8000 Series (0.4 lbs) <input type="radio"/> S1-NSB8BPN243-0 - Wall Temperature and 2% Relative Humidity Combined Sensor, Full Display, BLACK, NO JCI LOGO, NS8000 Series (0.4 lbs) <input type="radio"/> S1-NSB8BTN041-0 - Zone Temperature Sensor Only, NO DISPLAY, NO SETPOINT CONTROL , WHITE, NO LOGO (0.4 lbs) <input type="radio"/> S1-NSB8BTN141-0 - Zone Temperature Sensor Only, NO DISPLAY, WARMER/COOLER TEMP. ADJUSTMENT , WHITE, NO LOGO (0.4 lbs) <input type="radio"/> S1-NSB8BTN143-0 - Wall Temperature Sensor, Warmer/Cooler Display, BLACK, NO JCI LOGO, NS8000 Series (0.4 lbs) |
|---|--|--|

Project Name: **7549 Raleigh, NC WALG**Unit Model #: **KJ120N24R2BEGCA2R1**Quantity: **1** Tag #: **RTU-3**System: **KJ120N24R2BEGCA2R1**

- S1-NSB8BTN240-0 - Zone Temperature Sensor Only, LCD DISPLAY, LOCAL SETPOINT CONTROL , WHITE, WITH JCI LOGO (0.4 lbs)
- S1-NSB8BTN241-0 - Zone Temperature Sensor Only, LCD DISPLAY, LOCAL SETPOINT CONTROL , WHITE, NO LOGO (0.4 lbs)
- S1-NSB8BTN243-0 - Wall Temperature Sensor, Full Display, BLACK, NO JCI LOGO, NS8000 Series (0.4 lbs)
- S1-TEC3130-14-000 - 7 DAY PROGRAMMABLE THERMOSTAT, ZIGBEE PRO WIRELESS COMMUNICATION, RTU/HEAT PUMP WITH ECON, AND FULL COLOR, WHITE, NO LOGO (0.8 lbs)
- S1-TEC3131-14-000 - 7 DAY PROGRAMMABLE THERMOSTAT, ZIGBEE PRO WIRELESS COMMUNICATION, RTU/HEAT PUMP WITH ECON, OCC SENSOR, FULL COLOR, WHITE, JCI LOGO (0.8 lbs)
- S1-TEC3630-14-000 - 7 DAY PROGRAMMABLE THERMOSTAT, OPTIONAL MSTP OR N2 COMMUNICATION, RTU/HEAT PUMP WITH ECON, FULL COLOR, WHITE, JCI Logo (1.1 lbs)
- S1-TEC3631-14-000 - 7 DAY PROGRAMMABLE THERMOSTAT, OPTIONAL MSTP OR N2 COMMUNICATION, RTU/HEAT PUMP WITH ECON, OCC SENSOR, FULL COLOR, WHITE, JCI LOGO (0.8 lbs)
- S1-TL-CWCVT-0 - CWCVT Commissioning Tool (Connected Workflow Converter) (1.0 lbs)
- S1-YK/AN-RSO-ACI - Non-Networking Wall Sensor with Setpoint Adjustment and Over-ride Button – Allows remote sensing and control from single or multiple zones. (1.0 lbs)
- S1-ZFR-CBLEXT-1 - 10 FT Network Cable w/male RJ12 connections. Use to connect TMR to SSE 5.0 or SBH (1.0 lbs)
- YCCP100PK012LO - One Year Labor Only AC/HP PKG 8.5 to 10T
- YCCP100PK012PL - One Year Renewable Parts & Labor AC/HP PKG 8.5 to 10T
- YCCP100PK060PL - 5 Year Parts and Labor AC/HP PKG 8.5 to 10T
- YCCP100PK060PO - 5 Year Parts Only (No Compressor Coverage) AC/HP PKG 8.5 to 10T

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Unit Model #: KJ120N24R2BEGCA2R1

Quantity: 1 Tag #: RTU-3

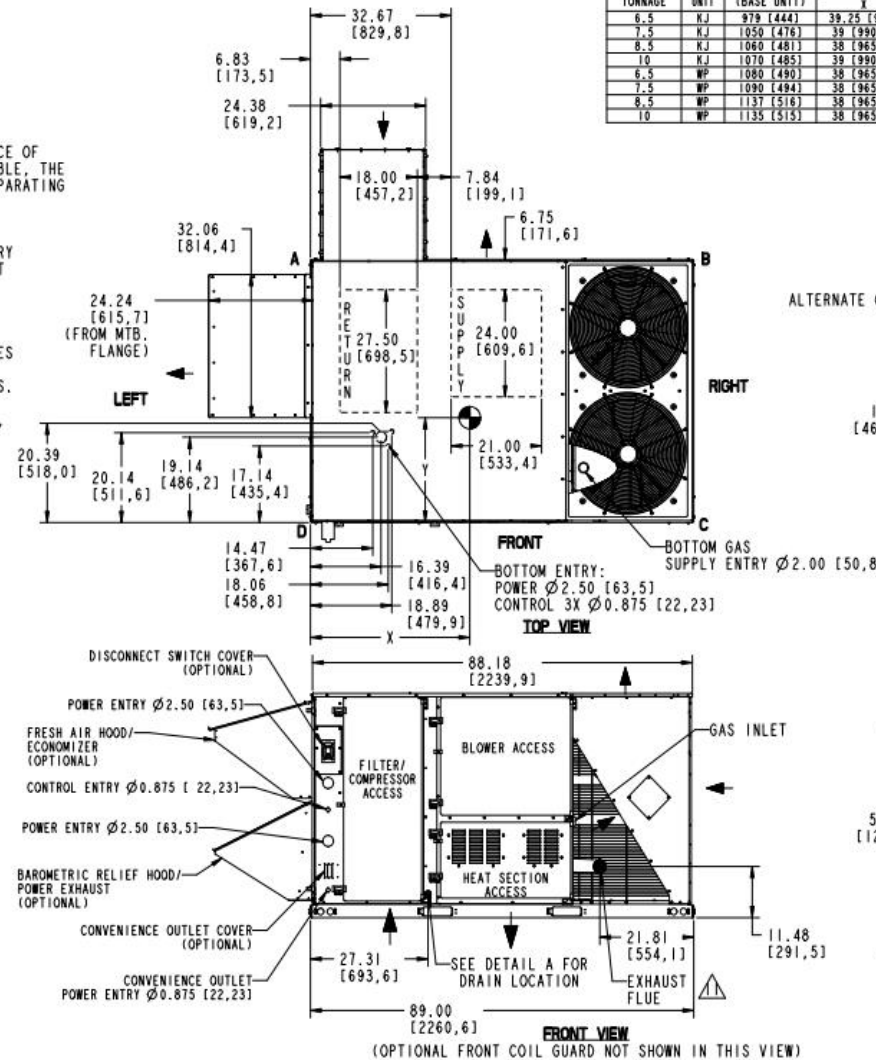
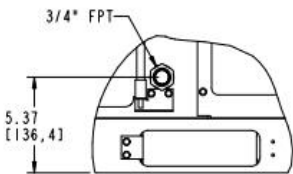
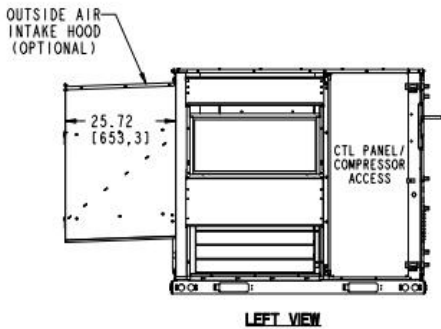
Submittal

- NOTES:**
- FOR OUTDOOR USE ONLY.
 - WEIGHTS SHOWN ARE FOR COOLING ONLY UNITS.
 - MIN. CLEARANCES TO BE:
 RIGHT SIDE: 12 [305]
 LEFT SIDE: 36 [915]
 FRONT: 48 [1220]
 REAR: 36 [915]
 TOP: 72 [1830]
 BOTTOM: 0 [0]
 - TO REMOVE THE SLIDE-OUT DRAIN PAN, A REAR CLEARANCE OF 60 in (1525 mm) IS REQUIRED. IF SPACE IS UNAVAILABLE, THE DRAIN PAN CAN BE REMOVED THROUGH THE FRONT BY SEPARATING THE CORNER WALL.
 - FOR SMALLER SERVICE AND OPERATIONAL CLEARANCES CONTACT YOUR APPLICATION ENGINEERING DEPARTMENT.
 - DOWNFLOW DUCTS DESIGNED TO BE ATTACHED TO ACCESSORY ROOF CURB ONLY. IF UNIT IS MOUNTED SIDE SUPPLY, IT IS RECOMMENDED THAT THE DUCTS ARE SUPPORTED BY CROSS BRACES, AS DONE ON ACCESSORY ROOF CURBS.
 - SIDE DUCT FLANGES ARE 0.75" HIGH. BOTTOM DUCTS DO NOT HAVE FLANGES.
 - MINIMUM CONDENSATION TRAP HEIGHT SHALL BE 1.5 TIMES THE LOWEST NEGATIVE STATIC.
 - DIMENSIONS IN [] ARE IN MILLIMETERS OR KILOGRAMS.
 - OPTIONAL COIL GUARDS, POWER EXHAUST, GAS HEAT, ECONOMIZER, DISCONNECT SWITCH, CONVENIENCE OUTLET, AND BAROMETRIC RELIEF AND FRESH AIR HOODS SHOWN.

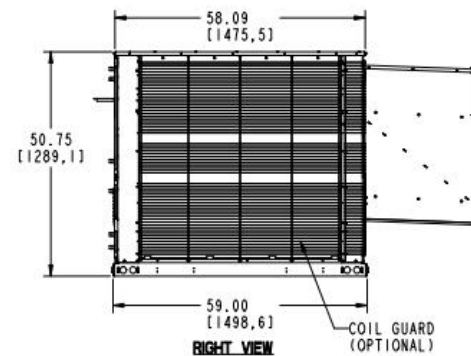
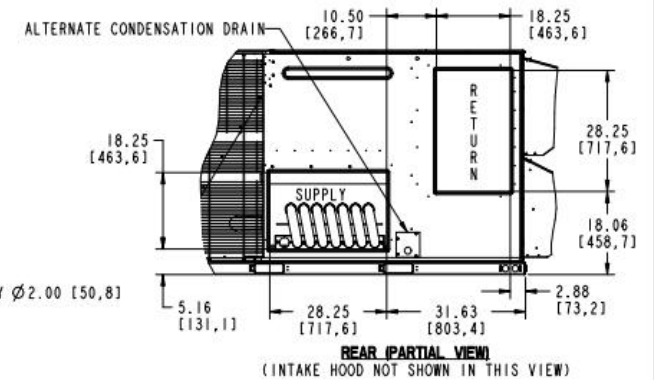
EXCEPT WP (HEAT PUMP) UNITS.

DIRECTION OF AIRFLOW

CENTER OF GRAVITY



TONNAGE	UNIT	OPERATING WEIGHT (LBS) (BASE UNIT)	CENTER OF GRAVITY LOCATION (BASE UNIT)		4 POINT CORNER LOADS (LBS) (BASE UNIT)			
			X	Y	A	B	C	D
6.5	KJ	979 [444]	39.25 [997]	24.4 [619,8]	226 [103]	179 [81]	253 [115]	321 [146]
7.5	KJ	1050 [476]	39 [990,6]	25 [635]	250 [113]	195 [89]	265 [120]	340 [154]
8.5	KJ	1060 [481]	38 [965,2]	24 [609,6]	247 [112]	184 [84]	268 [122]	360 [163]
10	KJ	1070 [485]	39 [990,6]	24 [609,6]	245 [111]	191 [87]	278 [126]	357 [162]
6.5	WP	1080 [490]	38 [965,2]	25 [635]	262 [119]	195 [89]	266 [121]	357 [162]
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8.5	WP	1137 [516]	38 [965,2]	25.5 [647,7]	282 [128]	210 [95]	276 [125]	376 [168]
10	WP	1135 [515]	38 [965,2]	25.5 [647,7]	281 [127]	209 [95]	275 [125]	369 [167]



REV	DATE	REVISION RECORD	EC	NO	DR	CK	ENG	THIRD ANGLE PROJECTION
A	10-31-23	NEW DRAWING	100724	LOP	RCH	BV		

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DRAWING PER ASME Y14.5-2009
 TOLERANCES UNLESS OTHERWISE SPECIFIED:
 ONE PLACE DECIMAL = ± .1
 TWO PLACE DECIMAL = ± .01
 THREE PLACE DECIMAL = ± .010
 ANGLES = ± 2'
 DIMENSIONS ARE IN INCHES
 DO NOT SCALE PRINT

SAFETY AND KEY CHARACTERISTICS PER BE-PP-STD-91
 MATERIAL
 TYPE NOT APPLICABLE
 ENG SPEC NOT APPLICABLE
 SIZE
 DWG NO. 6454071
 PART NO. REV A
 SHT NO. 1 OF 1

JOHNSON CONTROLS
 UNITARY PRODUCTS GROUP
 NORMAN, OK 73069

SCALE 0.075

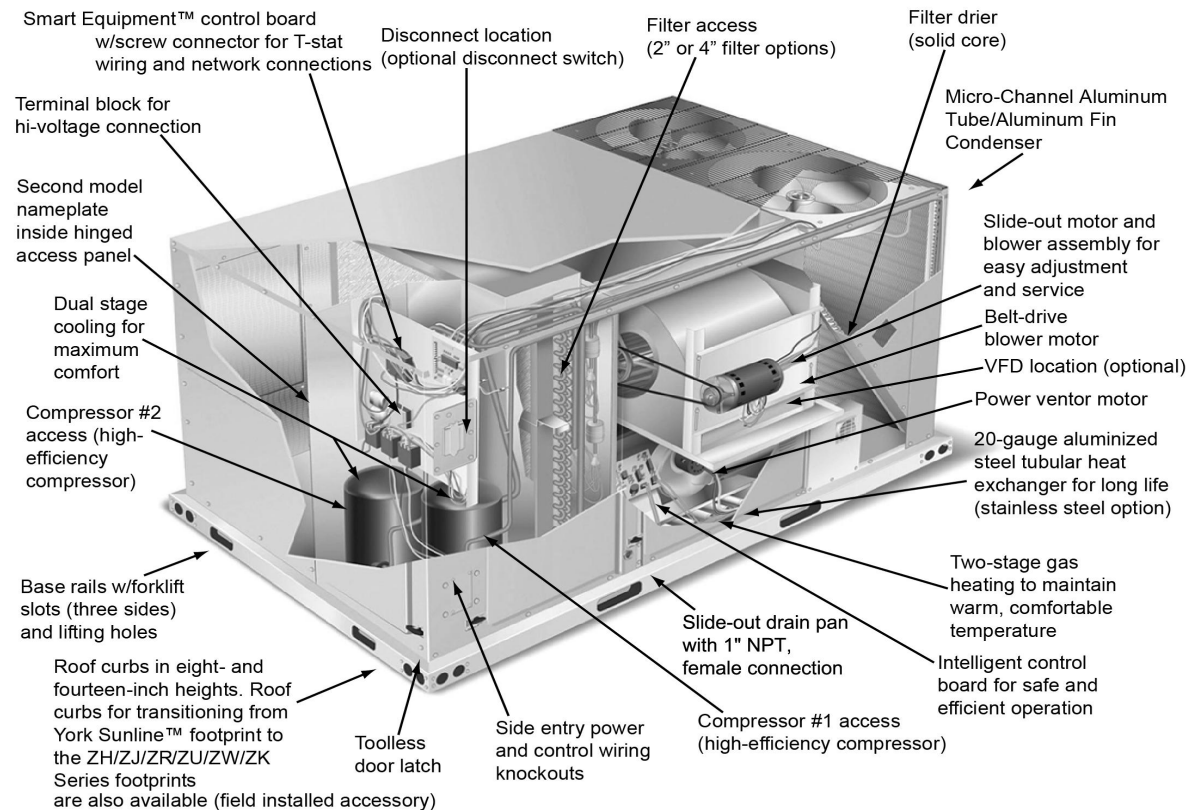
Project Name: 7549 Raleigh, NC WALG

Unit Model #: KJ120N24R2BEGCA2R1

Quantity: 1 Tag #: RTU-3

Component Locations

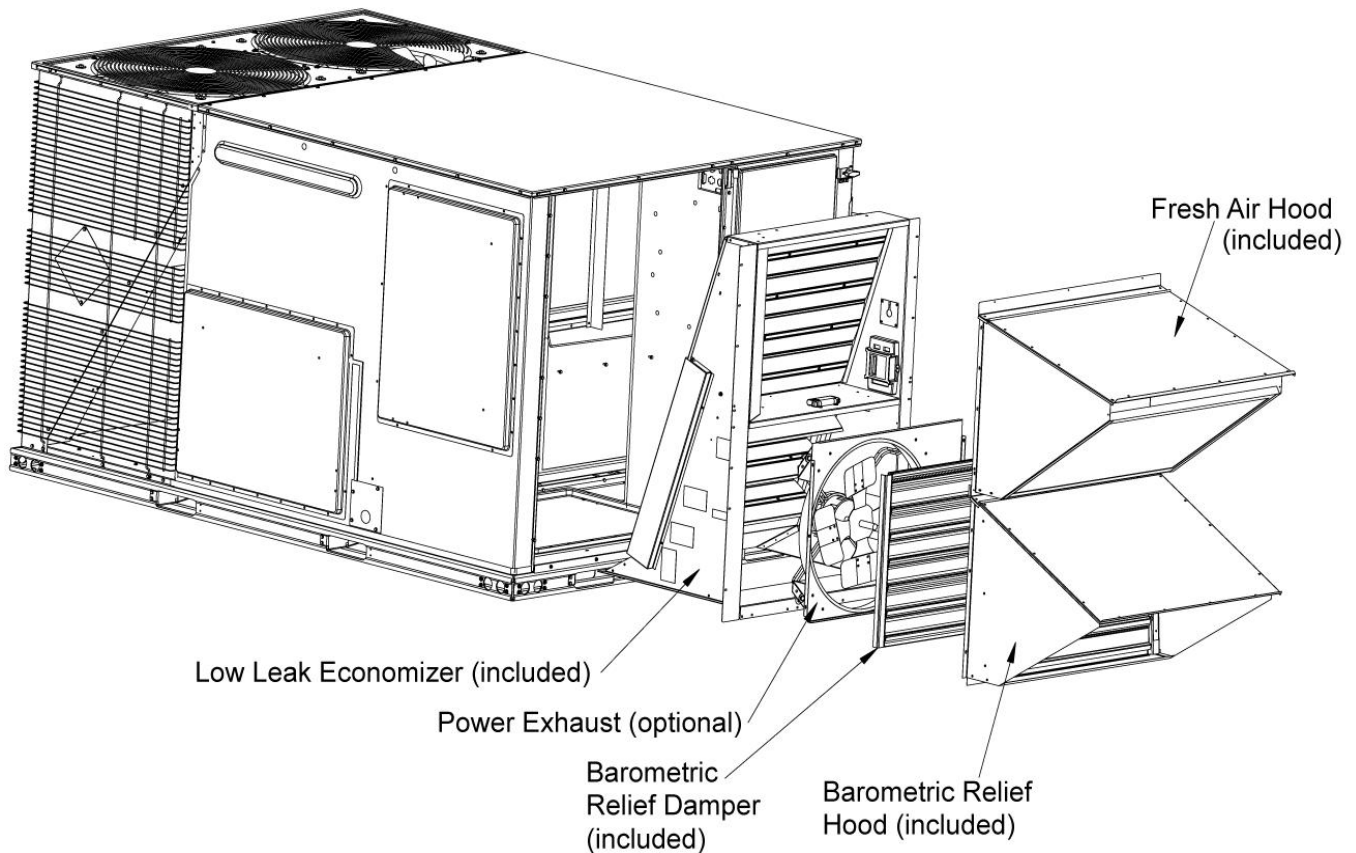
Cooling With Gas Heat (6.5 Through 10 Tons)



Project Name: 7549 Raleigh, NC WALG

Unit Model #: KJ120N24R2BEGCA2R1

Quantity: 1 Tag #: RTU-3

Low Leak Downflow Economizer**Low Leak Downflow Economizer (shown with optional Power Exhaust)**

Low leak economizers are capable achieving low leakage rates of 3 cfm/sq. ft at 1" of static pressure, meeting or exceeding the following standards:

- ASHRAE 90.1-2010
- ASHRAE 62
- AMCA 511 (licensed as Class 1A damper)
- International Energy Conservation Code (IECC)
- California Title 24

The outdoor intake opening shall be covered with a rain hood that matches the exterior of the unit. Water eliminator/filters shall be provided.

Simultaneous economizer/compressor operation is also possible. Dampers shall fully close on power loss.

Date

06/19/2025

Project Name

7549 Raleigh, NC WALG

Project Number

Client / Purchaser



Guide Specification Summary Page

Product Series	Models and Unit Tags	
3-12.5 York® Sun™ Pro	KJ120N24R2BEGCA2R1	RTU-3

GENERAL

York® Sun™ Pro units are convertible single packages with a common footprint cabinet and common roof curb for all 6-1/2 through 12-1/2 ton models. All have two compressors with independent refrigeration circuits to provide 2 stages of cooling. The units were designed for light commercial applications and can be easily installed on a roof curb, slab, or frame. All units are self contained and assembled on rigid full perimeter base rails allowing for 3-way forklift access and overhead rigging. Every unit is completely charged with refrigerant, wired, piped, and tested at the factory to provide a quick and easy field installation. All units are convertible between side and down airflow. Independent economizer designs are used on side and down discharge applications, as well as all tonnage sizes. Predator® units are available in the following configurations: cooling only, cooling with electric heat, cooling with gas heat, reheat only, reheat with electric heat and reheat with gas heat. Electric heaters are available as factory-installed options or field-installed accessories.

DESCRIPTION

Units shall be factory assembled, single package, (Elec/Elec, Gas/ Elec), designed for outdoor installation. They shall have built in field convertible duct connections for down discharge supply/return or horizontal discharge supply/return and be available with factory installed options or field installed accessories. The units shall be factory wired, piped and charged with refrigerant and factory tested prior to shipment. All unit wiring shall be both numbered and color coded. The cooling performance shall be rated in accordance with DOE and AHRI test procedures. Units shall be CSA certified to ANSI Z21.47 and UL 1995/CAN/CSA No. 236-M90 standards.

UNIT CABINET

Unit cabinet shall be constructed of galvanized steel with exterior surfaces coated with a non-chalking, powder paint finish, certified at a 750-hour salt spray test per ASTM-B117 standards. Indoor blower sections shall be insulated with up to 1" thick insulation coated on the airside. Either aluminum foil faced or elastometric rubber insulation shall be used in the unit's compartments and be fastened to prevent insulation from entering the air stream. Cabinet doors shall be hinged with toolless access for easy servicing and maintenance. Full perimeter base rails shall be provided to assure reliable transit of equipment, overhead rigging, fork truck access and proper sealing on roof curb applications. Disposable 2" filters shall be furnished as standard and be accessible through hinged access door. Fan performance measuring ports shall be provided on the outside of the cabinet to allow accurate air measurements of evaporator fan performance without removing panels or creating bypass of the coils.

Condensate pan shall be slide out design, constructed of a non corrosive material, internally sloped and conforming to ASHRAE 62-B9 standards. Condensate connection shall be a minimum of 3/4" I.D. female and be rigid mount connection.

INDOOR (EVAPORATOR) FAN ASSEMBLY

Fan shall be a belt drive assembly and include an adjustable pitch motor pulley. Job site selected brake horsepower shall not exceed the motors nameplate horsepower rating plus the service factor. Units shall be designed to operate within the service factor. Fan wheel shall be double inlet type with forward curve blades, dynamically balanced to operate smoothly throughout the entire range of operation. Airflow design shall be constant volume. Bearings shall be sealed and permanently lubricated for longer life and no maintenance. Entire blower assembly and motor shall be slide out design.

OUTDOOR (CONDENSER) FAN ASSEMBLY

The outdoor fans shall be of the direct drive type, discharge air vertically, have aluminum blades riveted to corrosion resistant steel spider brackets and shall be dynamically balanced for smooth operation. The outdoor fan motors shall have permanently lubricated bearings internally protected against overload conditions and staged independently. A cleaning window shall be provided on two sides of the units for coil cleaning.

REFRIGERANT COMPONENTS

Compressors:

- a. Shall be fully hermetic type, direct drive, internally protected with internal high-pressure relief and over temperature protection. The hermetic motor shall be suction gas cooled and have a voltage range of + or - 10% of the unit nameplate voltage.
- b. Shall have internal spring isolation and sound muffling to minimize vibration and noise, and be externally isolated on a dedicated, independent mounting.

Coils:

- a. Evaporator coils shall have aluminum plate fins mechanically bonded to seamless internally enhanced copper tubes with all joints brazed. Special Phenolic coating shall be available as a factory option.
- b. Evaporator coils shall be of the direct expansion, draw-thru design.
- c. Condenser coils shall have aluminum plate fins mechanically bonded to seamless internally enhanced copper tubes with all joints brazed or Micro-Channel aluminum tube, aluminum fins.
- d. Condenser coils shall be of the draw-thru design.

Refrigerant Circuit and Refrigerant Safety Components shall include:

- a. Independent fixed-orifice or thermally operated expansion devices.
- b. Solid core filter drier/strainer to eliminate any moisture or foreign matter.
- c. Accessible service gage connections on both suction and discharge lines to charge, evacuate, and measure refrigerant pressure during any necessary servicing or troubleshooting, without losing charge.
- d. The unit shall have two independent refrigerant circuits, equally split in 50% capacity increments.

Unit Controls:

- a. Unit shall be complete with self-contained low-voltage control circuit protected by a resettable circuit breaker on the 24-volt transformer side.
- b. Unit shall incorporate a lockout circuit which provides reset capability at the space thermostat or base unit should any of the following standard safety devices trip and shut off compressor:
 - Loss-of-charge/Low-pressure switch.
 - High-pressure switch.
 - Freeze condition sensor on evaporator coil. If any of these safety devices trip, the LCD screen will display the alarm message.
- c. Unit shall incorporate "AUTO RESET" compressor over temperature, over current protection.
- d. Unit shall operate with conventional thermostat designs and have a low voltage terminal strip for easy hook-up.
- e. Unit control board shall have on-board diagnostics and fault message display.
- f. Standard controls shall include anti-short cycle and low voltage protection, and permit cooling operation down to a selectable value as low as 0 °F.
- g. Control board shall monitor each refrigerant safety switch independently.

GAS HEATING SECTION

Heat exchanger and exhaust system shall be constructed of aluminized steel, and be designed with induced draft combustion with post purge logic, energy saving direct spark ignition, and redundant main gas valve. The heat exchanger shall be of the tubular type, constructed of T1-40 aluminized steel for corrosion resistance and allowing minimum mixed air entering temperature of 40 °F. Burners shall be of the in-shot type, constructed of aluminum-coated steel. All gas piping shall enter the unit cabinet at a single location, through either the side or bottom, without any field modifications. An integrated control board shall provide timed control of evaporator fan functioning and burner ignition. Heating section shall be provided with the following minimum protection:

- a. Primary and auxiliary high-temperature limit switches.
- b. Induced draft pressure sensor.
- c. Flame roll out switch (manual reset).
- d. Flame proving controls.
- e. All two stage gas units shall have two independent stages of capacity (70% or 75% 1st stage, 100% 2nd stage) 3 through 5 ton and (60% 1st stage, 100% 2nd stage) 6-1/2 through 12-1/2 ton.

UNIT OPERATING CHARACTERISTICS

Unit shall be capable of starting and running at 125 °F outdoor temperature, exceeding maximum load criteria of AHRI Standard 340/360. The compressor, with standard controls, shall be capable of operation down to 0 °F outdoor temperature. Unit shall be provided with fan time delay to prevent cold air delivery before heat exchanger warms up. (Gas heat only)

ELECTRICAL REQUIREMENTS - All unit power wiring shall enter unit cabinet at a single factory provided location and be capable of side or bottom entry to minimize roof penetrations and avoid unit field modifications. Separate side and bottom openings shall be provided for the control wiring.

STANDARD LIMITED WARRANTIES - Compressor – 5 Years, Heat Exchanger – 10 Years, Elect. Heat Elem. – 5 Years, Parts – 1 Year.

FACTORY INSTALLED OPTIONAL OUTDOOR AIR (Shall be made available by either/or):

- **DRY BULB AUTOMATIC ECONOMIZER** – Outdoor and return air dampers that are interlocked and positioned by a fully-modulating, spring-return damper actuator. The maximum leakage rate for the outdoor air intake dampers shall be designed to meet ASHRAE 90.1, AMCA 511 Class 1A damper, and the International Energy Conservation Code (IECC) certification requirements by achieving leakage rates of 3 CFM/sq. ft. at 1" of static pressure. Changeover from compressor to economizer operation shall be provided by an integral electronic enthalpy control that feeds input into the basic module. The outdoor intake opening shall be covered with a rain hood that matches the exterior of the unit. Water eliminator/filters shall be provided. Simultaneous economizer/compressor operation is also possible. Dampers shall fully close on power loss.

ADDITIONAL FACTORY INSTALLED OPTIONS

- **Alternate Indoor Blower Motor** – For applications with high restrictions, units are available with optional indoor blower motors that provide higher static output and/or higher airflow.
- **IntelliSpeed™ Supply Fan Control Option (ASHRAE 90.1 compliant, section 6.4.3.10)** – Units configured with the IntelliSpeed™ Supply Fan Option will contain a VFD for variable volume supply fan operation. This option allows the supply fan RPM to vary based on the number of compressors or heating stages energized. The economizer's minimum position will also be configurable to vary based on the supply fan VFD frequency output.
- **Non-Powered Convenience Outlet** – Unit is provided with a non-powered 120VAC GFCI outlet with cover on the corner of the unit housing the compressors.
- **BAS Controls** – Include supply air sensor, return air sensor, dirty filter indicator and air proving switch.
- **Smoke Detector** – A smoke detector can be factory mounted and wired in the supply and/or return air compartments.

FIELD INSTALLED OPTIONS

Date

06/19/2025

Project Name

7549 Raleigh, NC WALG

Project Number

Client / Purchaser



Control Summary Page

Control	Models and Unit Tags
BACnet MSTP,MdbS,N2 COM Card	KJ120N24R2BEGCA2R1 RTU-3

23 09 23 Direct- digital Control system for HVAC23 09 23. 13 Decentralized, Rooftop Units:23 09 23. 13.A. Unit Control Board

1. ASHRAE 62- 2001 compliant. BTL certified.
2. Shall accept 20-30 VAC input power, 50/60Hz. 24 VAC nominal.
3. Operating temperature range from -40F to 158F; 10-90% RH (non-condensing UI), and -4F to 158F; 10-90% Rh (non-condensing), with a storage temperature range from -40F to 194F; 5-95% RH (non-condensing).
4. Shall include an option of and Economizer microprocessor controller which communicates directly with the Unit Control Board and has 8 Analog outputs, 2 Analog inputs, 2 Binary outputs, 3 Binary outputs.
5. Controller shall accept the following inputs: space temperature, return air temperature sensor, setpoint adjustment, outdoor air temperature, indoor air quality, outdoor air quality, indoor relative humidity, compressor lock- out, fire/smoke shutdown, single and dual enthalpy, fan status, remote time clock, SA Bus communicated temperature/humidity/CO2 values from Network sensors, FC Bus Network Overrides for space temperature, outdoor air temperature, space humidity, outdoor air quality, Indoor air quality, System purge.
6. Shall accept a single CO2 sensor or multiple CO2 sensors networked together via communication bus in the conditioned space, and be Demand Control Ventilation (DCV) ready.
7. Shall provide the following outputs: economizer, fan, cooling stage 1, cooling stage 2, heat stage 1, heat stage 2, heat stage 3/ exhaust/ reversing valve/ dehumidify/occupied.
8. Unit shall provide surge protection for the controller through a circuit breaker.
9. Shall be Internet capable, and communicate at a Baud rate of 38.4K or faster.
10. Shall have an LED display independently showing the status of activity on the communication bus, and processor operation.
11. Unit shall incorporate a lockout circuit which provides reset capability at the space thermostat or base unit should any of the following standard safety devices trip and shut off compressor. If any of these safety devices trip, the LCD screen will display alarm message indicating the specific safety device that caused the lockout.
 - a. Loss of charge/Low-pressure switch.
 - b. High-pressure switch.
 - c. Freeze condition sensor on evaporator coil.
12. Unit control board must support each usage case:
 - a. Conventional thermostat with low voltage input terminals for easy installation
 - b. Communicating network sensors in the occupied space to provide feedback on space conditions for unit control board to compare with associated setpoints
 - c. Communication via BACnet MS/TP, Modbus RTU, N2 protocols for integration into a building automation/management system
13. Anti-short cycle and low voltage protection features included.
14. Internal occupied/unoccupied scheduling
15. Unit control board shall permit cooling operation down to a selectable value as low as 0 degrees F.
16. Shall allow for start-up, commissioning, troubleshooting, parameter adjustment, setpoint adjustment via onboard display and navigable menu with no additional interface tool or controls technician required.
17. The unit control board shall run a self-test diagnostics algorithm at startup that operated the cooling cycle, heating cycle, fan operation. A status report shall be provided upon completion of the diagnostic self-test.
18. Utilize any wi-fi enabled smart device to access the HVAC or multiple HVAC units if communication wiring between them is present (FC Bus or SA Bus). Remote access shall allow complete ability to perform start-up, commissioning, troubleshooting, parameter adjustment, setpoint adjustment.
19. Local embedded trending and scheduling. Trending data and occupancy scheduling predefined from the factory. Occupancy schedule to be modified via control board joystick menu navigation and remotely using a smart device (cellular phone, laptop, tablet)
20. A menu on the onboard screen shall display the unit status and allow changing parameters where applicable. These include but are not limited to:
 - a. Demand Ventilation Mode – enable or disable
 - b. Operational Setpoint – display current value
 - c. Supply Air Temperature (SAT) – display current value
 - d. Return Air Temperature (RAT) – display current value

- e. Operational Supply Humidity (OprSH) – display current value as provided by a 0-10VDS input, SA Bus Network Sensor, or FC Bus communicated value
 - f. Return Air Humidity (RAH) – display current value
 - g. Operational outdoor Air Temperature (OprOAT) – enthalpy calculated from OAH 0-10VDC input to Economizer board and OprOAT only if economizer is present
 - h. Operational Outdoor Air Humidity (OprOAH) – the buffered outdoor air humidity. May be from economizer boards OAH 0-10VDC input or FC Bus communicated value
 - i. Operational outdoor Air Quality (OprOAQ) – the buffered outdoor air quality in use. May be from economizer boards OAQ 0-10VDC input or FC Bus communicated value
 - j. Operational Indoor Air Quality (OprIAQ) – the buffered indoor air quality in use. May be from economizer board IAQ 0-10VDC input, SA Bus Network Sensor, or FC Bus communicated value
21. A menu shall display and allow modification to the following operations and settings:
- a. HVAC Zone Fan
 - b. Cooling
 - c. Heating
 - d. Economizer
 - e. Demand Ventilation
 - f. Power Exhaust
 - g. Sensors
 - h. Network
22. A menu shall display and allow modification to the following operations and settings:
- a. HVAC Zone – Occupied status
 - b. Indoor Fan status
 - c. Cooling status
 - d. Heating status
 - e. Economizer indication whether free-cooling is available or not
 - f. Enabling or disabling of Demand Ventilation
 - g. Power Exhaust
 - 1) Enable/disable hot-gas reheat if available
 - 2) Warmup/Cooldown
 - 3) Title 24 Load Shed
 - 4) Defrost
23. A menu shall display and allow modification to the following operations and settings:
- a. Firmware version (of UCB, Economizer, other peripheral boards)
 - b. Setting time zone
 - c. Network information
 - 1) Device name that will appear on the FC Bus
 - 2) Selection of communication protocol
 - 3) Operational Baud Rate
 - 4) Device ID
24. A menu shall display and allow modification to the following operations and settings:
- a. Version of firmware
 - b. Ability to Load new firmware
 - c. Create a backup file of the firmware and parameter setting via USB port
 - d. Restore factory default parameter values and setup
 - e. Full and Partial Cloning of parameter setpoints from or to other units
 - f. Data trend exporting
25. A menu shall display and allow modification to the following operations and settings:

- a. Unit serial number, model number and name
- b. Ability to reset Lockouts
- c. Controller name
- d. Displays the current values of all setpoints in use
- e. Displays all current values for the indoor and outdoor zones
- f. Displays current values related to:
 - 1) Indoor Fan
 - 2) Cooling
 - 3) Heating
 - 4) Heat Pump operation
 - 5) Economizer operation
 - 6) Power Exhaust
 - 7) Demand Ventilation
 - 8) Air monitoring station
 - 9) Hot Gas Reheat
 - 10) Smoke Control
- g. Current information for inputs; including
 - 1) Sensors
 - 2) Coil Sensors
 - 3) Thermostat
 - 4) Binary Inputs
 - 5) Unit Protection
 - 6) Network Inputs
 - 7) All outputs (relay and binary)
- h. Self-Test
 - 1) A patented self-test system that runs through a series of algorithms to provide a report of all functioning characteristics of the system at time of startup and commissioning.

23 09 23. 13.B. Auxiliary Control Boards

1. ASHRAE 62- 2001 compliant. BTL certified.
2. Economizer controller CEC Title 24 Compliant
 - a. Display alarms if the following occur
 - 1) Economizer is economizing when conditions do not support
 - 2) Economizer is not economizing when conditions do support
 - 3) Damper Stuck
 - 4) Excess Outdoor Air
 - 5) Failed Sensor
3. Refrigeration Fault Detection & Diagnostics
 - a. There is insufficient refrigerant in any circuit
 - b. There is excessive refrigerant in any circuit
 - c. There is excessive refrigerant flow
 - d. There is insufficient refrigerant flow (restriction)
 - e. Inefficient compressor
 - f. Insufficient High-side heat transfer
 - g. Excessive High-side heat transfer (low ambient control problem, low ΔP)
 - h. Insufficient Low-side heat transfer
 - i. Excessive Low-side heat transfer

- j. Sensor fault- The liquid temperature is greater than the condenser temperature (Could also be triggered if refrigerant level is very low in the system)
- k. Sensor fault- Sensor data is not available
- l. The unit is off
- m. The ambient temperature is too low
- n. The ambient temperature is too high
- o. The return air wet-bulb temperature is too low
- p. The return air wet-bulb temperature is too high
- q. Sensor fault- The condensing temperature is lower than the ambient temperature (Could also be triggered when the condenser is wet)
- r. The suction line temperature is less than the evaporator temperature
- s. The evaporator temperature is greater than the ambient temperature
- t. The liquid temperature is lower than the ambient temperature
- u. Sensor fault- Suction temperature or ambient temperature is invalid
- v. Sensor fault- The return air dry-bulb or wet-bulb temperature is invalid
- w. Sensor fault- The liquid pressure or suction pressure is invalid
- x. Sensor fault- The suction line temperature is invalid
- y. The return air dry-bulb temperature is too low
- z. The return air dry-bulb temperature is too high
- aa. The Efficiency Index is below 75% of ideal
- bb. The Capacity Index is below 75% of ideal

23 09 23. 13.C Remote Accessibility:

1. ASHRAE 62- 2001 compliant. BTL certified.
2. Provide the ability to adjust parameter values, setpoints, limits remotely
3. Connectivity to an Ethernet network via static IP address or Dynamic Name Server (DNS)
4. Allow a maximum of 100 devices on the same FC bus trunk and accessed by one remote device

Start-up sheet

START-UP & SERVICE DATA INSTRUCTION**COMMERCIAL PACKAGE UNITS****3.0 To 50.0 TONS****START-UP CHECKLIST**

Date: _____

Job Name: _____

Customer Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Model Number: _____ Serial Number: _____

Qualified Start-up Technician: _____ Signature: _____

HVAC Contractor: _____ Phone: _____

Address: _____

Contractor's E-mail Address: _____

Electrical Contractor: _____ Phone: _____

Distributor Name: _____ Phone: _____

WARRANTY STATEMENT

Johnson Controls/Ducted Systems is confident that this equipment will operate to the owner's satisfaction if the proper procedures are followed and checks are made at initial start-up. This confidence is supported by the 30 day dealer protection coverage portion of our standard warranty policy which states that Johnson Controls/Ducted Systems will cover parts and labor on new equipment start-up failures that are caused by a defect in factory workmanship or material, for a period of 30 days from installation. Refer to the current standard warranty policy and warranty manual for details.

In the event that communication with Johnson Controls/Ducted Systems is required regarding technical and/or warranty concerns, all parties to the discussion should have a copy of the equipment start-up sheet for reference. A copy of the original start-up sheet should be filed with the Technical Services Department.

The packaged unit is available in constant or variable air volume versions with a large variety of custom options and accessories available. Therefore, some variation in the startup procedure will exist depending upon the products capacity, control system, options and accessories installed.

This start-up sheet covers all startup check points common to all package equipment. In addition it covers essential startup check points for a number of common installation options. Depending upon the particular unit being started not all sections of this startup sheet will apply. Complete those sections applicable and use the notes section to record any additional information pertinent to your particular installation.

Warranty claims are to be made through the distributor from whom the equipment was purchased.

EQUIPMENT STARTUP

Use the local LCD or Mobile Access Portal (MAP) Gateway to complete the start-up.

A copy of the completed start-up sheet should be kept on file by the distributor providing the equipment and a copy sent to:

Johnson Controls/Ducted Systems
 Technical Services Department
 5005 York Drive
 Norman, OK 73069

SAFETY WARNINGS

The inspections and recording of data outlined in this procedure are required for start-up of Johnson Controls/Ducted Systems' packaged products. Industry recognized safety standards and practices must be observed at all times. General industry knowledge and experience are required to assure technician safety. It is the responsibility of the technician to assess all potential dangers and take all steps warranted to perform the work in a safe manner. By addressing those potential dangers, prior to beginning any work, the technician can perform the work in a safe manner with minimal risk of injury.

⚠ WARNING
Lethal voltages are present during some start-up checks. Extreme caution must be used at all times.

⚠ WARNING
Moving parts may be exposed during some startup checks. Extreme caution must be used at all times.

NOTE: Read and review this entire document before beginning any of the startup procedures.

DESIGN APPLICATION INFORMATION

This information will be available from the specifying engineer who selected the equipment. If the system is a VAV system the CFM will be the airflow when the remote VAV boxes are in the

full open position and the frequency drive is operating at 60 HZ. **Do not proceed with the equipment start-up without the design CFM information.**

Design Supply Air CFM: _____ Design Return Air CFM: _____

Design Outdoor Air CFM At Minimum Position: _____

Total External Static Pressure: _____

Supply Static Pressure: _____

Return Static Pressure: _____

Design Building Static Pressure: _____

Outside Air Dilution: Economizer Position Percentage: _____ CFM: _____

Supply Gas Pressure After Regulator W/o Heat Active _____ Inches _____

ADDITIONAL APPLICATION NOTES FROM SPECIFYING ENGINEER:

REFERENCE

General Inspection	Completed	See Notes
Unit inspected for shipping, storage, or rigging damage	<input type="checkbox"/>	<input type="checkbox"/>
Unit installed with proper clearances	<input type="checkbox"/>	<input type="checkbox"/>
Unit installed within slope limitations	<input type="checkbox"/>	<input type="checkbox"/>
Refrigeration system checked for gross leaks (presence of oil)	<input type="checkbox"/>	<input type="checkbox"/>
Terminal screws and wiring connections checked for tightness	<input type="checkbox"/>	<input type="checkbox"/>
Filters installed correctly and clean	<input type="checkbox"/>	<input type="checkbox"/>
Economizer hoods installed in operating position	<input type="checkbox"/>	<input type="checkbox"/>
Condensate drain trapped properly, refer to Installation Manual	<input type="checkbox"/>	<input type="checkbox"/>
Economizer damper linkage tight	<input type="checkbox"/>	<input type="checkbox"/>
Gas Heat vent hood installed	<input type="checkbox"/>	<input type="checkbox"/>
All field wiring (power and control) complete	<input type="checkbox"/>	<input type="checkbox"/>

Air Moving Inspection	Completed	See Notes
Alignment of drive components	<input type="checkbox"/>	<input type="checkbox"/>
Belt tension adjusted properly	<input type="checkbox"/>	<input type="checkbox"/>
Blower pulleys tight on shaft, bearing set screws tight, wheel tight to shaft	<input type="checkbox"/>	<input type="checkbox"/>
Pressure switch or transducer tubing installed properly	<input type="checkbox"/>	<input type="checkbox"/>

Exhaust Inspection Powered <input type="checkbox"/> Barometric Relief <input type="checkbox"/>	Completed	See Notes
Check hub for tightness	<input type="checkbox"/>	<input type="checkbox"/>
Check fan blade for clearance	<input type="checkbox"/>	<input type="checkbox"/>
Check for proper rotation	<input type="checkbox"/>	<input type="checkbox"/>
Check for proper mounting (screen faces towards unit)	<input type="checkbox"/>	<input type="checkbox"/>
Prove operation by increasing minimum setting on economizer	<input type="checkbox"/>	<input type="checkbox"/>

Economizer Inspection Standard <input type="checkbox"/> BAS <input type="checkbox"/>	Completed	See Notes
CO ₂ sensor installed Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check economizer setting (Reference Smart Equipment™ Control Board LCD menu location)	<input type="checkbox"/>	<input type="checkbox"/>
Prove economizer open/close through Smart Equipment™ Board Setting	<input type="checkbox"/>	<input type="checkbox"/>

Reheat Mode Normal <input type="checkbox"/> or Alternate <input type="checkbox"/> Not Applicable <input type="checkbox"/>
Humidity Sensor (2SH0401) _____

Operating Measurements - Air Flow

Fan operates with proper rotation (All VFD equipped units with the optional Manual Bypass must be phased for correct blower rotation with the Bypass switch set in the LINE position) ID Fans Exh. Fans Cond. Fans

Pressure drop across dry evaporator coil (At maximum design CFM) ¹	IWC
External Static Pressure	IWC
Return Static Pressure	IWC
Supply Static Pressure	IWC
Supply Air CFM Using Dry Coil Chart	CFM
Final Adjusted Supply Air CFM ²	CFM

1. Consult the proper airflow to pressure drop table to obtain the actual airflow at the measured pressure differential.
2. Was a motor pulley adjustment or change required to obtain the correct airflow?
 Was it necessary to increase or decrease the airflow to meet the design conditions?
 If the motor pulley size was changed, measure the outside diameters of the motor and blower pulleys and record those diameters here:
 Blower Motor HP _____ FLA _____ RPM _____
 Pulley Pitch Diameter _____ Turns Out _____ Final Turns Out _____
 Blower Pulley Pitch Diameter _____ Fixed Sheave _____

ELECTRICAL DATA

T1 - T2 _____ Volts T2 - T3 _____ Volts
 Control Voltage _____ Volts T1 - T3 _____ Volts

Device	Nameplate	Measured List All Three Amperages
Supply Fan Motor ^{1,2}	AMPS	AMPS
Exhaust Motor (Dampers 100%)	AMPS	AMPS
Condenser Fan #1	AMPS	AMPS
Condenser Fan #2 (if equipped)	AMPS	AMPS
Condenser Fan #3 (if equipped)	AMPS	AMPS
Condenser Fan #4 (if equipped)	AMPS	AMPS
Compressor #1	AMPS	AMPS
Compressor #2 (if equipped)	AMPS	AMPS
Compressor #3 (if equipped)	AMPS	AMPS
Compressor #4 (if equipped)	AMPS	AMPS

1. VAV units with heat section - simulate heat call to drive VAV boxes and VFD/IGV to maximum design airflow position.
2. VAV units without heat section - VAV boxes must be set to maximum design airflow position.

Limited Warranty

Rooftop and Splits

*This limited Warranty applies in the United States
(including Puerto Rico), Canada, and Mexico only*

The Johnson Controls, Inc. subsidiary or affiliate identified as the selling entity in the underlying contract or in the relevant terms and conditions of sale is "Manufacturer".

For product registration: For your benefit and protection, please register your product with the manufacturer promptly after installation so we can contact you if necessary. Failure to register does not diminish your standard Limited Warranty rights. You can register your product online at www.upgproductregistration.com.

Limited Warranty: Manufacturer warrants to the purchaser (the "Buyer") that the applicable products set forth below (each a "Product") will be free from defects in factory workmanship and material under normal use when correctly installed and maintained pursuant to the Manufacturer's Installation Manual and User's Information Manual ("Manufacturer's Documentation"). The Manufacturer will repair or replace, at its option, defective parts without charge, subject to the conditions and exclusions below and according to the terms set forth in this Limited Warranty. The Manufacturer reserves the right, at its sole discretion, to provide an equivalent replacement product instead of repair parts. Alternatively, the Manufacturer may at its option, offer a replacement price allowance to be applied toward the purchase of a new product offered by the Manufacturer. The exact allowance amount will be determined at the sole discretion of the Manufacturer, based upon, among other things, availability, age of the existing product and current market conditions. The Manufacturer will not be responsible for costs for shipping, ductwork, wiring, piping, or installation. If a replacement product or parts are provided by the Manufacturer under this limited warranty, the Warranty Period (as set forth below) for the replacement product or parts shall not extend beyond the original Warranty Period. With respect to third party parts included in the products, the manufacturer shall pass through the terms of any warranty provided by the applicable third-party manufacturer/supplier to the extent permitted as the sole warranty for any such third-party products parts.

Warranty Period: The "Warranty Period" begins on the date the product is shipped and ends as set forth in **Table 1**. If the date of shipment cannot be verified, the Warranty Period begins eighteen months after the date of manufacture. Regardless of the date of shipment, the Warranty Period begins no later than 18 months from the date of manufacture. If you are unaware of the Warranty Period, contact Johnson Controls at 1-877-874-7378 or www.upgproductregistration.com.

Table 1: Warranty period in years

Platform*	Item	Warranty period
Pro, Core, Small Sunline, Choice, Splits (7.5 ton to 25 ton), Select	Compressor	5 years
	Electric heat (factory installed)	5 years
	Aluminized gas heaters	10 years
	Stainless steel gas heaters	15 years
	Coated evaporator or condenser coil	3 years
	All other parts	1 year
Splits (30 ton to 50 ton), Premier	Stainless steel gas heaters	10 years
	Coated evaporator or condenser coil (only for Splits 30 ton to 50 ton)	3 years
	All other parts	1 year

For this warranty to apply, the product must be installed according to the Manufacturer's Documentation including but not limited to specifications, and in accordance with all local, state, and national codes, and the product must not be removed from its place of original installation without Manufacturer's written consent.

*** Applicable products as follows**

Platform	Product model number
Small Sunline	XN, ZE, WN, KE
Core	XQ, XX, XY, ZQ, ZL, ZX, ZY, WQ, WX, WY, KQ, KX, KY, KL
Pro	XP, ZJ, ZB, ZT, WP, KJ, KB, KT
Choice	AV, AD, CV, CD, HV, HD, PV, PD, AW, AE, CW, CE, AH/L, AS/K, CH/L, CS/K, KV, KD, LV, LD, WV, WD, MV, MD, KW, KE, LW, LE, KH/L, KS/K, LH/L, LS/K
Select	J(V,H,X,Y), Y(V,H,X,Y), T(V,H,X,Y), U(V,H,X,Y), V(V,H,X,Y), K(V,H,X,Y), F(V,H,X,Y), R(V,H,X,Y)
Premier	GV, GZ, GT
Splits (7.5 ton to 25 ton)	N(C/E/F/L/M), Y(E/C/D), P(E/C/D), G(C/E/F/L/M), K(E/C/D), W(E/C/D)
Splits (30 ton to 50 ton)	ND, YD, GD, KD

Conditions and exclusions

This Limited Warranty does not cover and expressly excludes any of the following:

1. Shipping, labor, refrigerant replacement, or material charges.
2. Damages resulting from transportation, installation, or servicing, including but not limited to the failure to add the specified refrigerant.
3. Damages resulting from accident, abuse, fire, flood, alteration, or acts of God.
4. Tampering, altering, defacing, or removing the product serial number will serve to void this warranty.
5. Damages resulting from use of the product in a corrosive atmosphere including the start up and running of the product during the construction of the building.
6. Use of the product out of its specified scope of appliance of comfort cooling.
7. Damages resulting from inadequacy or interruption of electrical service or fuel supply, improper voltage conditions, blown fuses, or other like damages.
8. Cleaning or replacement of filters.
9. Damages resulting from failure to properly and regularly clean air and/or water side of heat recovery core.
10. Damages resulting from freezing of condensate.
11. Damages resulting from operation with inadequate supply of air or water.
12. Damages resulting from use of components or accessories not approved by the Manufacturer, such as vent dampers.
13. Damages resulting from long term storage where the equipment has not been correctly prepared or maintained as per the long-term storage requirements. The condition is limited to all Premier units and units greater than 27 tons.

Disclaimers and Limitation of Liability:

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, AND EXCEPT AS STATED ABOVE IN THIS LIMITED WARRANTY, MANUFACTURER MAKES NO (AND SPECIFICALLY DISCLAIMS ALL) REPRESENTATIONS OR WARRANTIES OF ANY KIND, WHETHER EXPRESSED, IMPLIED, STATUTORY, OR OTHERWISE, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY, SATISFACTORY QUALITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE OR NON- INFRINGEMENT, AND ANY WARRANTY ARISING OUT OF ANY COURSE OF PERFORMANCE, COURSE OF DEALING OR USAGE OF TRADE. SOME JURISDICTIONS DO NOT ALLOW THE FOREGOING, EXCLUSIONS AND LIMITATIONS. IN SUCH EVENT, SUCH EXCLUSION OR LIMITATION WILL NOT APPLY SOLELY TO THE EXTENT PROHIBITED BY APPLICABLE LAW AND THE DURATION OF ANY IMPLIED WARRANTIES WILL BE LIMITED TO THE DURATION OF THIS LIMITED WARRANTY.

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WARRANTY ISSUES SHOULD BE FILED WITHIN 90 DAYS OF THE FIRST OCCURRENCE ON SOLUTION NAVIGATOR.COM THROUGH THE LOCAL CHANNEL PARTNER.

IN FILING WARRANTY PLEASE PROVIDE THE FOLLOWING:

- PRODUCT MODEL NUMBER AND SERIAL NUMBER
- THE DATE THE PRODUCT WAS INSTALLED
- A DETAILED DESCRIPTION OF THE WARRANTY ISSUE



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5005 York Drive, Norman, Oklahoma 73069
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6509978-UWA-A-0624
Supersedes: 65711-UWA-D-1123