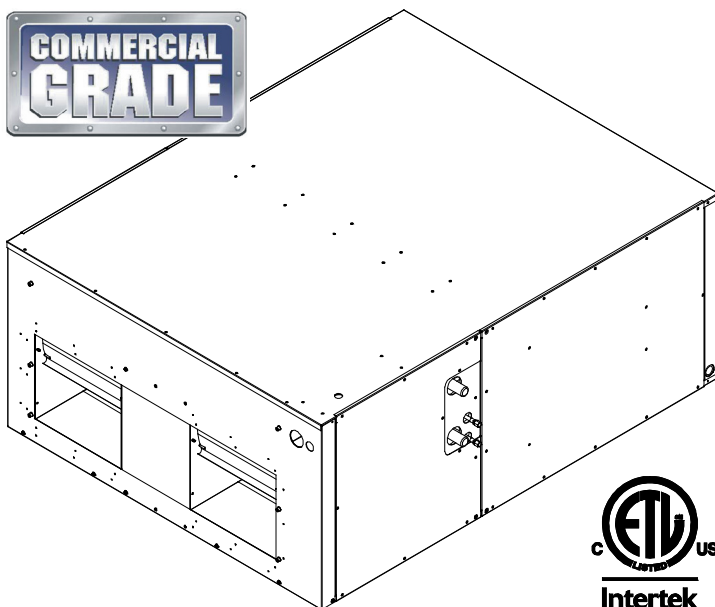


DAX SERIES COMMERCIAL AIR HANDLERS

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IMPORTANT NOTE: DAX MODELS ARE SUITABLE FOR UPFLOW AND HORIZONTAL INSTALLATIONS ONLY. DO NOT USE FOR DOWNFLOW INSTALLATIONS.

WARNING

DO NOT BYPASS SAFETY DEVICES.

WARNING

ONLY PERSONNEL THAT HAVE BEEN TRAINED TO INSTALL, ADJUST, SERVICE, MAINTENANCE OR REPAIR (HEREINAFTER, "SERVICE") THE EQUIPMENT SPECIFIED IN THIS MANUAL SHOULD SERVICE THE EQUIPMENT. THE MANUFACTURER WILL NOT BE RESPONSIBLE FOR ANY INJURY OR PROPERTY DAMAGE ARISING FROM IMPROPER SERVICE OR SERVICE PROCEDURES. IF YOU SERVICE THIS UNIT, YOU ASSUME RESPONSIBILITY FOR ANY INJURY OR PROPERTY DAMAGE WHICH MAY RESULT. IN ADDITION, IN JURISDICTIONS THAT REQUIRE ONE OR MORE LICENSES TO SERVICE THE EQUIPMENT SPECIFIED IN THIS MANUAL, ONLY LICENSED PERSONNEL SHOULD SERVICE THE EQUIPMENT. IMPROPER INSTALLATION, ADJUSTMENT, SERVICING, MAINTENANCE OR REPAIR OF THE EQUIPMENT SPECIFIED IN THIS MANUAL, OR ATTEMPTING TO INSTALL, ADJUST, SERVICE OR REPAIR THE EQUIPMENT SPECIFIED IN THIS MANUAL WITHOUT PROPER TRAINING MAY RESULT IN PRODUCT DAMAGE, PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

ATTENTION INSTALLING PERSONNEL:
Prior to installation, thoroughly familiarize yourself with this Installation Manual. Observe all safety warnings. During installation or repair, caution is to be observed.

It is your responsibility to install the product safely and to educate the customer on its safe use.



RECOGNIZE THIS SYMBOL AS A SAFETY PRECAUTION.


Our continuing commitment to quality products may mean a change in specifications without notice.



Important Safety Instructions


The following symbols and labels are used throughout this manual to indicate immediate or potential safety hazards. It is the owner's and installer's responsibility to read and comply with all safety information and instructions accompanying these symbols. Failure to heed safety information increases the risk of personal injury, property damage, and/or product damage.

	WARNING
<p>HIGH VOLTAGE DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.</p>	
	



	WARNING
<p>TO AVOID PROPERTY DAMAGE, PERSONAL INJURY OR DEATH DUE TO ELECTRICAL SHOCK, THIS UNIT MUST HAVE AN UNINTERRUPTED, UNBROKEN ELECTRICAL GROUND. THE ELECTRICAL GROUND CIRCUIT MAY CONSIST OF AN APPROPRIATELY SIZED ELECTRICAL WIRE CONNECTING THE GROUND LUG IN THE UNIT CONTROL BOX TO THE BUILDING ELECTRICAL SERVICE PANEL. OTHER METHODS OF GROUNDING ARE PERMITTED IF PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC) / AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) / NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 70 AND LOCAL/STATE CODES. IN CANADA, ELECTRICAL GROUNDINGS IS TO BE IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE (CSA) C22.1.</p>	

	CAUTION
<p>WHEN INSTALLING OR SERVICING THIS EQUIPMENT, SAFETY CLOTHING, INCLUDING HAND AND EYE PROTECTION, IS STRONGLY RECOMMENDED. IF INSTALLING IN AN AREA THAT HAS SPECIAL SAFETY REQUIREMENTS (HARD HATS, ETC.), OBSERVE THESE REQUIREMENTS.</p>	

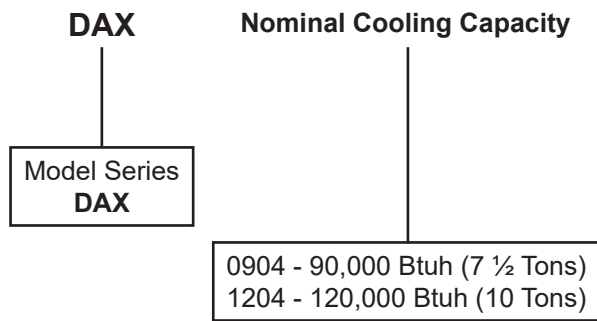
	WARNING
<p>DO NOT CONNECT TO OR USE ANY DEVICE THAT IS NOT DESIGN-CERTIFIED BY THE MANUFACTURER FOR USE WITH THIS UNIT. SERIOUS PROPERTY DAMAGE, PERSONAL INJURY, REDUCED UNIT PERFORMANCE AND/OR HAZARDOUS CONDITIONS MAY RESULT FROM THE USE OF SUCH NON-APPROVED DEVICES.</p>	

	WARNING
<p>TO PREVENT THE RISK OF PROPERTY DAMAGE, PERSONAL INJURY, OR DEATH, DO NOT STORE COMBUSTIBLE MATERIALS OR USE GASOLINE OR OTHER FLAMMABLE LIQUIDS OR VAPORS IN THE VICINITY OF THIS UNIT.</p>	

	WARNING
<p>THIS AIRHANDLER IS DESIGNED FOR UPFLOW OR HORIZONTAL-LEFT APPLICATIONS. DO NOT INSTALL IN THE DOWNFLOW OR HORIZONTAL-RIGHT ORIENTATION.</p>	

	DANGER PELIGRO
	
CARBON MONOXIDE POISONING HAZARD	
<p>Special Warning for Installation of Furnace or Air Handling Units in Enclosed Areas such as Garages, Utility Rooms or Parking Areas</p>	
<p>Carbon monoxide producing devices (such as an automobile, space heater, gas water heater, etc.) should not be operated in enclosed areas such as unventilated garages, utility rooms or parking areas because of the danger of carbon monoxide (CO) poisoning resulting from the exhaust emissions. If a furnace or air handler is installed in an enclosed area such as a garage, utility room or parking area and a carbon monoxide producing device is operated therein, there must be adequate, direct outside ventilation.</p> <p>This ventilation is necessary to avoid the danger of CO poisoning which can occur if a carbon monoxide producing device continues to operate in the enclosed area. Carbon monoxide emissions can be (re)circulated throughout the structure if the furnace or air handler is operating in any mode.</p>	
<p>CO can cause serious illness including permanent brain damage or death. B10259-216</p>	
RIESGO DE INTOXICACIÓN POR MONÓXIDO DE CARBONO	
<p>Advertencia especial para la instalación de calentadores ó manejadoras de aire en áreas cerradas como estacionamientos ó cuartos de servicio.</p> <p>Los equipos ó aparatos que producen monóxido de carbono (tal como automóvil, calentador de gas, calentador de agua por medio de gas, etc) no deben ser operados en áreas cerradas debido al riesgo de envenenamiento por monóxido de carbono (CO) que resulta de las emisiones de gases de combustión. Si el equipo ó aparato se opera en dichas áreas, debe existir una adecuada ventilación directa al exterior.</p> <p>Esta ventilación es necesaria para evitar el peligro de envenenamiento por CO, que puede ocurrir si un dispositivo que produce monóxido de carbono sigue operando en el lugar cerrado.</p> <p>Las emisiones de monóxido de carbono pueden circular a través del aparato cuando se opera en cualquier modo.</p> <p>El monóxido de carbono puede causar enfermedades severas como daño cerebral permanente ó muerte. B10259-216</p>	
RISQUE D'EMPOISONNEMENT AU MONOXYDE DE CARBONE	
<p>Avertissement special au sujet de l'installation d'appareils de chauffage ou de traitement d'air dans des endroits clos, tels les garages, les locaux d'entretien et les stationnements.</p> <p>Evitez de mettre en marche les appareils produisant du monoxyde de carbone (tels que les automobile, les appareils de chauffage autonome, etc.) dans des endroits non ventilés tels que les d'empoisonnement au monoxyde de carbone. Si vous devez faire fonctionner ces appareils dans un endroit clos, assurez-vous qu'il y ait une ventilation directe provenant de l'exterieur.</p> <p>Cette ventilation est nécessaire pour éviter le danger d'intoxication au CO pouvant survenir si un appareil produisant du monoxyde de carbone continue de fonctionner au sein de la zone confinée.</p> <p>Les émissions de monoxyde de carbone peuvent être recirculées dans les endroits clos, si l'appareil de chauffage ou de traitement d'air sont en marche.</p> <p>Le monoxyde de carbone peut causer des maladies graves telles que des dommages permanents au cerveau et même la mort. B10259-216</p>	

Product Identification



Product Description

When matched with DX14XA and DZ14XA condensers, this system complies with the minimum efficiency requirements found in ASHRAE 90.1-2019. See the Daikin DX14XA and DZ14XA specification sheets for details on these condensers. For other Daikin condenser(s) that can be matched with this airhandler to obtain ASHRAE 90.1-2019 compliance, consult with your local distributor.

The DAX series is intended for use with a room thermostat. This thermostat is not supplied with this equipment. Only thermostats that use 24 VAC control circuitry are to be used.

	DAX0904	DAX1204
Net Weight (Lbs.)	400	400
Shipping Weight (Lbs.)	430	430
Refrigerant	R-410A	R-410A
Blower Wheel (Dia x Width)	11x10	11x10
Blower Wheel Quantity	2	2
Motor Type	Direct Drive	Direct Drive
Motor Qty	2	2
Motor (HP)	1	1
Motor (RPM)	1200	1200
Evaporator Coil Material	Copper Tubes /Al Fins	
Face Area (Ft ²)	10.0	10.0
Number of Rows	4	4
Suction Line Quantity	2	2
Suction Line Connection (in)*	1 1/8	1 1/8
Liquid Line Quantity	2	2
Liquid Line Connection (in)*	3/8	3/8
Metering Device	Thermal Expansion Valve	
TXV Type	Adjustable (factory installed)	
TXV Quantity	2	2

***NOTE: CONSULT WITH THE CONDENSER SPECIFICATIONS FOR SUCTION AND LIQUID LINE SIZING.**

Unit Inspection

Upon delivery, the unit is to be inspected for damage. Any damage must be reported immediately to the carrier. Do not install this equipment if it is determined that the integrity or safety has been compromised by freight damage.

Using the table "Model Identification" section check the equipment model number and voltage to ensure the unit is appropriately sized for the condenser unit(s).

If an incorrect unit is supplied it must not be installed and it is to be returned to the supplier. The manufacturer assumes no responsibility for the installation of incorrect delivered units.

The evaporator coil contains a high-pressure inert gas holding charge.

Codes & Regulations

This product is designed and manufactured to comply with national codes. Installation in accordance with such codes and/or prevailing local codes/regulations is the responsibility of the installer. The manufacturer assumes no responsibility for equipment installed in violation of any codes or regulations.

The United States Environmental Protection Agency (EPA) has issued various regulations regarding the introduction and disposal of refrigerants. Failure to follow these regulations may harm the environment and can lead to the imposition of substantial fines. Should you have any questions please contact the local office of the EPA.

Replacement Parts

When reporting shortages or damages, or ordering repair parts, give the complete product model and serial numbers as stamped on the product. Replacement parts for this product are available through your contractor or local distributor. For the location of your nearest distributor consult the white business pages, the yellow page section of the local telephone book or contact:

EQUIPMENT SUPPORT
 DAIKIN NORTH AMERICA LLC
 19001 KERMIER ROAD
 WALLER, TEXAS 77484
 855-770-5678

If replacing an air handler, the system must be manufacturer approved and Air-Conditioning, Heating, and Refrigeration Institute (AHRI) matched. **NOTE:** Installation of unmatched systems is strongly discouraged.

Pre-Installation Instructions

Carefully read all instructions for the installation prior to installing product. Make sure each step or procedure is understood and any special considerations are taken into account before starting installation. Assemble all tools, hardware and supplies needed to complete the installation. Some items may need to be purchased locally. Make sure everything needed to install the product is on hand before starting.

Location

NOTE: AIRHANDLERS ARE DESIGNED FOR INDOOR INSTALLATION ONLY.

When installing this airhandler in an enclosed area, such as a garage/parking area, as with any carbon monoxide producing device (i.e. and automobile, space heater, water heater, etc.), insure that the area is properly ventilated.

The DAX airhandler is suitable for installation in multiple locations including:

- Overhead (attic/mezzanine, etc.)
- Closet/mechanical room

When installing this airhandler, consideration is to be given to minimize the length of refrigerant tubing. Also, do not install the airhandler in a location either above or below the condenser that violates the instructions provided with the condenser.

The clearance from a combustible surface to the unit may be 0". However, service clearance is to take precedence. In addition allow a minimum of 36" in front of the unit for service clearance. Allow sufficient clearance to remove the heater elements for service or replacement in heat kits when utilized in application.

When installing in an area directly over a finished ceiling (such as an attic), an emergency drain pan is required directly under the unit. See local and state codes for additional requirements.

When installing this unit in an area that may become wet, elevate the unit with a sturdy, non-porous material.

In installations that may lead to physical damage (warehouse, industrial sites, etc.), it is advised to install a protective barrier to prevent such damage.

Ductwork

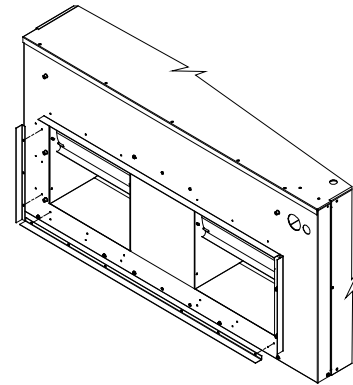
This DAX air handler is designed for a complete supply and return ductwork system.

 CAUTION
DO NOT OPERATE THIS PRODUCT WITHOUT ALL THE DUCTWORK ATTACHED.

In order to ensure optimum system performance, it is recommended that the ductwork is to be sized to accommodate 375-425 CFM per ton of cooling with the total external static pressure not to exceed .5" WC. Inadequate duct work that restricts airflow can result in improper performance and compressor or heater failure. Ductwork is to be constructed in a manner that limits restrictions and maintains suitable air velocity. Ductwork is to be sealed to the unit in a manner that will prevent leakage.

Supply Ductwork and Flanges

The supply ductwork flanges are shipped loose and required to be field installed. See the following sketch for further details: Dimensions are approximately 40" x 13-1/8".



Return Ductwork

DO NOT TERMINATE THE RETURN DUCTWORK IN AN AREA THAT CAN INTRODUCE TOXIC, OR OBJECTIONABLE FUMES/ODORS INTO THE DUCTWORK. The return ductwork is to be introduced into the air handler bottom (upflow configuration). The cabinet dimensions are 48" x 24".

Return Air Filters

Each installation must include a return air filter. This unit is factory equipped with disposable return air filters. To ensure optimum performance, frequent filter replacement is advised. See the following table for the factory installed filter sizes.

Model	Filter Size (in)	Qty.
DAX0904 and DAX1204	16 x 20 x 2	2
	20 x 20 x 2	2

Electric Heat

Refer to this manual in combination with the instructions provided with the heat kit for the correct installation procedure.

The electrical characteristics of the airhandler, the electric heat kit, and the building power supply must agree. The air handlers listed in this manual do not have factory installed electric heat. Electric heat is available as an accessory. If installing this option, the **ONLY** heat kits that can be used are the AHKD series.

AHKD MODEL NUMBER	NOMINAL KW	ELECTRICAL CHARACTERISTICS	STAGES
AHKD15-3A	15	208-240/3/60	1
AHKD15-4A	15	480/3/60	1
AHKD20-3A	20	208-240/3/60	2
AHKD20-4A	20	480/3/60	2
AHKD30-3A	30	208-240/3/60	2
AHKD30-4A	30	480/3/60	2

For all supply voltages, use the correction factors in the following tables, multiplied by KW and (or) temperature rise to have corrected results.

KW Correction Factors (-3A Models)

Supply Voltage	240	230	220	210	208
Correction Factor	1	0.92	0.84	0.77	0.75

KW Correction Factors (-4A Models)

Supply Voltage	480	460	440	415	380
Correction Factor	1	0.92	0.84	0.75	0.63

The heating mode temperatures rise is dependent upon the system airflow, the supply voltage, and the heat kit size (KW) selected. Use the following table to determine the temperature rise (°F).

DAX0904 Temperature Rise Table (°F)

DAX0904 Temperature Rise Table (°F) - 7.5Ton				
KW	CFM	208	240	480
15	2800	12	16	16
15	2900	12	16	16
15	3000	11	15	15
15	3100	11	15	15
15	3200	10	14	14
20	2800	16	22	22
20	2900	16	21	21
20	3000	16	21	21
20	3100	16	20	20
20	3200	15	20	20
30	2800	24	32	32
30	2900	23	31	31
30	3000	23	30	30
30	3100	21	29	29
30	3200	21	29	29



DAX1204 Temperature Rise Table (°F)


DAX1204 Temperature Rise Table (°F) - 10Ton				
KW	CFM	208	240	480
15	3800	9	12	12
15	3900	9	12	12
15	4000	9	12	12
15	4100	9	12	12
15	4200	8	11	11
20	3800	12	17	17
20	3900	12	16	16
20	4000	12	16	16
20	4100	12	15	15
20	4200	11	15	15
30	3800	19	25	25
30	3900	18	24	24
30	4000	18	24	24
30	4100	17	23	23
30	4200	17	23	23

NOTE: TEMPERATURE RISE TABLES ARE CALCULATED WITH BOTH STAGES OF ELECTRIC HEAT ENGAGED (2 STAGE HEAT SYSTEMS).

Electrical Supply Wire and MOP

	CAUTION
<p>FIRE HAZARD! TO AVOID THE RISK OF PROPERTY DAMAGE, PERSONAL INJURY OR FIRE, USE ONLY COPPER CONDUCTORS.</p>	

	WARNING	
<p>HIGH VOLTAGE DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.</p>		

	WARNING
<p>HIGH VOLTAGE! TO AVOID PROPERTY DAMAGE, PERSONAL INJURY OR DEATH DUE TO ELECTRICAL SHOCK, THIS UNIT MUST HAVE AN UNINTERRUPTED, UNBROKEN ELECTRICAL GROUND. THE ELECTRICAL GROUND CIRCUIT MAY CONSIST OF AN APPROPRIATELY SIZED ELECTRICAL WIRE CONNECTING THE GROUND LUG IN THE UNIT CONTROL BOX TO THE BUILDING ELECTRICAL SERVICE PANEL. OTHER METHODS OF GROUNDING ARE PERMITTED IF PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC) / AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) / NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 70 AND LOCAL/STATE CODES. IN CANADA, ELECTRICAL GROUNDINGS IS TO BE IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE (CSA) C22.1.</p>	

Building Electrical Service Inspection

This unit is designed for 3-phase operation. DO NOT OPERATE ON A SINGLE PHASE POWER SUPPLY. SEE THE PRECEDING WARNING. Measure the power supply to the unit. The supply voltage must be in agreement with the unit nameplate power requirements and within the range shown below:

Nominal	Minimum Supply Voltage	Maximum Supply Voltage
208 - 230	197	253
460	414	506

Voltage Balance: The supply voltage shall be unbalance (phase to phase) within 2%. To calculate the percentage of voltage unbalance use the following formula:

$$\text{Percentage Voltage Unbalance} = 100 \times \frac{\text{Max Voltage Deviation From Average}}{\text{Average Voltage}}$$

Example:

$$L1 - L2 = 220 \text{ V}$$

$$L2 - L3 = 216 \text{ V}$$

$$L1 - L3 = 213 \text{ V}$$

Avg. Voltage:

$$= \frac{(220+216+213)}{3}$$

$$= 649 / 3$$

$$= 216$$

Max. Deviation from Avg. = 220 - 216 = 4

% Voltage Unbalance = 100 x (4 / 216)

$$= 400 / 216$$

$$= 1.8\%$$

Determine Wire Size: The selection of the appropriate supply wire size is important to the operation of the equipment. When selecting the wire size the following are important elements of the decision:

- The wire size is adequately sized to carry the Minimum Circuit Ampacity (MCA). Refer to the NEC (USA) or CSA (Canada) for wire sizing. The unit MCA for the airhandler and the optional electric heat kit can be found on the equipment S&R plate and the following table.

AIRHANDLER	VOLTAGE	HEAT KIT	MCA
DAX0904 and DAX1204	208 - 230	None	15.5 / 15.5
		AHKD15-3A	56.3 / 62.4
		AHKD20-3A	69.4 / 77.4
		AHKD30-3A	95.4 / 108
	460	None	5.2
		AHKD15-4A	28.3
		AHKD20-4A	35.8
		AHKD30-4A	50.9

Wire Sizing

Wire size is important to the operation of your equipment. Use the following check list when selecting the appropriate wire size for your unit.

- Wire size must carry the Minimum Circuit Ampacity (MCA).**

- Refer to the NEC (USA) or CSA (Canada) for wire sizing. The unit MCA for the air handler and the optional electric heat kit can be found on the unit Series and Rating Plate.
- Wire size allows for no more than a 2% voltage drop from the building breaker/fuse panel to the unit.**

Refer to the latest edition of the National Electric Code or in Canada the Canadian Electric Code when determining the correct wire size. The following table shows the current carrying capabilities for copper conductors rated at 75°C with a 2% voltage drop. Use **this table** determine the voltage drop per foot of various conductors.

MAXIMUM ALLOWABLE LENGTH IN FEET TO LIMIT VOLTAGE DROP TO 2%

Wire Size (AWG)	Minimum Circuit Ampacity (MCA)							
	10	15	20	25	30	35	40	45
14	77	51	38	NR	NR	NR	NR	NR
12	122	81	61	49	NR	NR	NR	NR
10	193	129	97	77	64	55	NR	NR
8	307	205	154	123	103	88	77	68
6	489	326	244	195	163	140	122	109

Maximum Overcurrent Protection (MOP)

Every installation must include an NEC (USA) or CEC (Canada) approved overcurrent protection device. Also, check with local or state codes for any special regional requirements.

Protection can be in the form of fusing or HACR style circuit breakers. The Series and Rating Plate can be used as a guide for selecting the MAXIMUM overcurrent device or reference the following table.

NOTE: FUSES OR CIRCUIT BREAKERS ARE TO BE SIZED LARGER THAN THE EQUIPMENT MCA BUT NOT TO EXCEED THE MOP.

AIRHANDLER	VOLTAGE	HEAT KIT	MOP
DAX0904 and DAX1204	208 - 230	None	20 / 20
		AHKD15-3A	60 / 70
		AHKD20-3A	70 / 80
		AHKD30-3A	100 / 110
	460	None	15
		AHKD15-4A	30
		AHKD20-4A	40
		AHKD30-4A	60

Electrical Connections

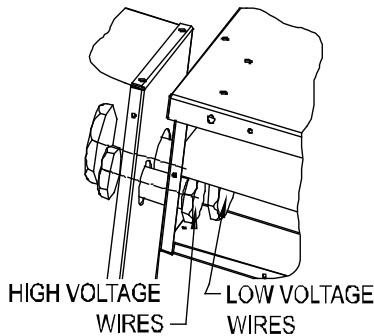
Supply Voltage

USE COPPER CONDUCTORS ONLY.

A single point supply voltage termination is provided in the airhandler control box (non-heat kit models) or heat kit control box (heat kit models). This termination is common to both the airhandler, and if equipped, heat kit. The wire is to be sized in accordance with the “Electrical Wire and MOP” section of this manual. Reference wiring diagram provided with the unit and this manual for supply voltage connections.

Air Handler Only (Non-Heat Kit Models)

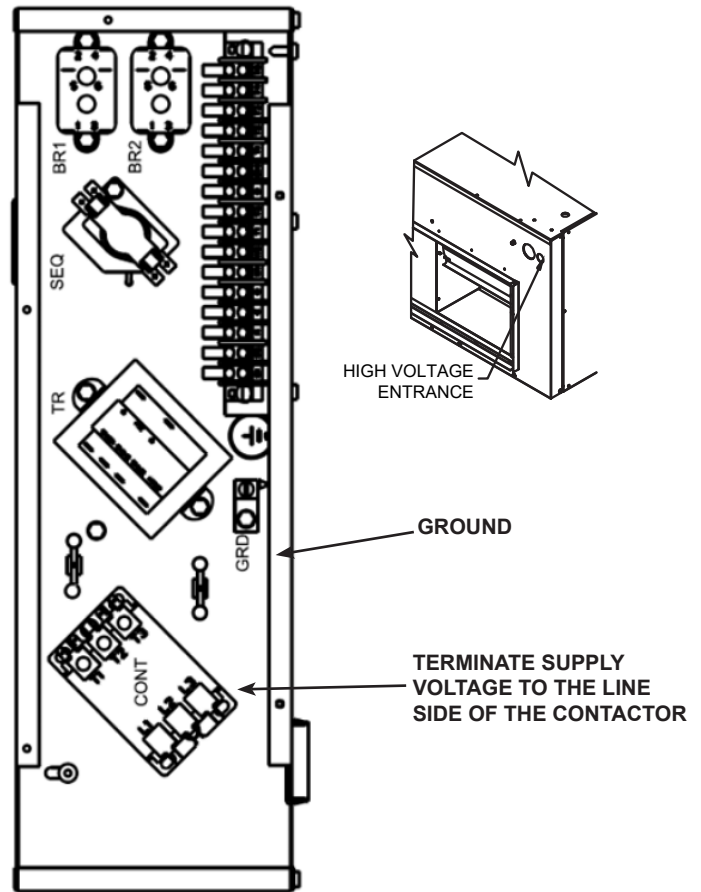
Supply wire is to be routed through conduit from the service disconnect box to the unit. The airhandler is equipped with a knockout suitable for 3/4" conduit. The following diagram illustrates the supply voltage hook-up.



Heater Kit Models

When a heater kit is used the system uses a single point wiring hook-up. The supply wire is to be routed through conduit from the service disconnect box to the heater kit. The heat kit is equipped with a knockout suitable for 1/2" or 3/4" conduit dependent on the KW. The supply voltage is to be installed on the terminal block located in the heater kit control box.

The heater kit is factory equipped with the supply and low voltage wires for the airhandler. The low voltage connection from the heater kit is provided through a multi-pin plug which connects to a mating plug in the airhandler. The high voltage connections are to be made at the air handler contactor. These wires are to be routed through the pipe nipples supplied with the heater kit as shown in the illustration:



Low Voltage Connections

The 24V-control voltage connects the airhandler to the room thermostat and condenser. These models are designed for use with a two-stage thermostat. Low voltage wiring is to be copper conductors, and be a minimum of 18AWG. A provision on the cabinet side to accept the low voltage wiring is provided. See the system wiring diagram for typical low voltage connections.

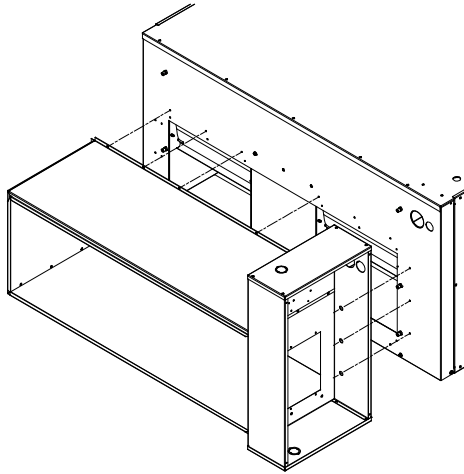
Heat Kit Installation

Inspect for Shipping Damage. The heat kit is an optional accessory that is shipped separately from the air handler. Inspect the heat kit for damage and report any damage to the carrier and/or distributor. Do not install this accessory if it is determined that the integrity or safety has been compromised by freight damage.

Check the Nameplate. From the heat kit nameplate check the following:

- The model number agrees with the approved models (see the “Electric Heat” section of this manual).
- The correct size (kW)
- Electric characteristics, voltage and phase, agree with the building electrical supply.
- Attaching the Heat Kit: The heat kit attaches directly to the top panel (when viewed in the upflow position)

of the airhandler. Do not screw the heat kit into the duct flanges. See the following drawing for details:



The wires from the heat kit are to be routed through the pipe nipple into the air handler electrical compartment. See the “Electrical Connection” section of this manual for wiring details.

Refrigerant Lines



WARNING

THIS PRODUCT IS FACTORY-SHIPED UNDER PRESSURE. FOLLOW THESE INSTRUCTIONS TO PREVENT INJURY.



WARNING

A QUENCHING CLOTH IS STRONGLY RECOMMENDED TO PREVENT SCORCHING OR MARRING OF THE EQUIPMENT FINISH WHEN WELDING CLOSE TO THE PAINTED SURFACES. USE BRAZING ALLOY OF 5% MINIMUM SILVER CONTENT.

Tube Preparation

All cut ends are to be round, burr free, and clean. Failure to follow this practice increases the chances for refrigerant leaks. The suction line is spun closed and requires pipe cutters to remove the closed end.

Post Brazing

Quench all welded joints with water or a wet rag.

Piping Size

For the correct tubing size, follow the specification for the condenser/heat pump.

The DAX can be connected to a single condenser/heat pump, or connected to 2 condensers/heat pumps. When using a single outdoor unit, it is necessary to manifold the suction lines into a single connection. Similarly, the liquid lines are to be manifolded when matched with a single condenser/heat pump. See the following sketches for additional details.

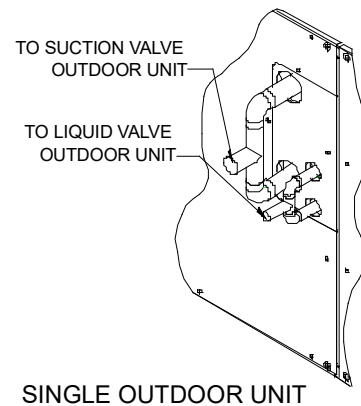
On a 7 ½ ton DAX unit you can use either one 7 ½ ton condenser or two 4 ton condensers.

On a 10 ton DAX unit you can use either one 10 ton condenser or two 5 ton condensers.



CAUTION

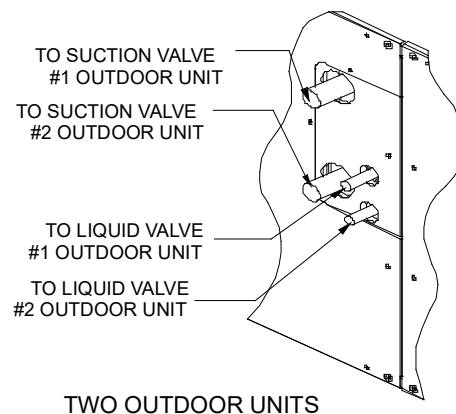
APPLYING TOO MUCH HEAT TO ANY TUBE CAN MELT THE TUBE. TORCH HEAT REQUIRED TO BRAZE TUBES OF VARIOUS SIZES MUST BE PROPORTIONAL TO THE SIZE OF THE TUBE. SERVICE PERSONNEL MUST USE THE APPROPRIATE HEAT LEVEL FOR THE SIZE OF THE TUBE BEING BRAZED.



NOTE: THE RESULTING MANIFOLDS ARE TO BE SIZED TO ACCEPT THE SUCTION AND LIQUID LINE DIAMETERS PRESCRIBED WITHIN THE CONDENSER INSTALLATION MANUAL.

Multiple Condensers

The DAX can accept (2) condensers/heat pumps. When using two outdoor units, use the following piping procedure:



IMPORTANT NOTE: TORCH HEAT REQUIRED TO BRAZE TUBES OF VARIOUS SIZES IS PROPORTIONAL TO THE SIZE OF THE TUBE. TUBES OF SMALLER SIZE REQUIRE LESS HEAT TO BRING THE TUBE TO BRAZING TEMPERATURE BEFORE ADDING BRAZING ALLOY. APPLYING TOO MUCH HEAT TO ANY TUBE CAN MELT THE TUBE. SERVICE PERSONNEL MUST USE THE APPROPRIATE HEAT LEVEL FOR THE SIZE OF THE TUBE BEING BRAZED.

NOTE: THE USE OF A HEAT SHIELD WHEN BRAZING IS RECOMMENDED TO AVOID BURNING THE SERIAL PLATE OR THE FINISH ON THE UNIT. HEAT TRAP OR WET RAGS SHOULD BE USED TO PROTECT HEAT SENSITIVE COMPONENTS SUCH AS SERVICE VALVES AND TXV VALVES.

Evaporator Coil TXV

NOTE: THERMAL EXPANSION VALVE (TXV) BULB IS NOT PERMANENTLY CONNECTED TO THE SUCTION FROM THE FACTORY. AFTER SUCTION AND LIQUID LINE TUBING IS BRAZED IN THE FIELD, THE TXV BULB MUST BE ATTACHED AND INSULATION TO THE SUCTION LINE(S) INSIDE THE CABINET AT THE 10 OR 2 O’CLOCK POSITION. THIS LOCATION WILL BE DIFFERENT DEPENDING ON THE ORIENTATION OF THE UNIT, VERTICAL OR HORIZONTAL. ALWAYS LOCATE THE TXV BULB ON THE TOP OF THE SUCTION TUBE AT 10 OR 2 O’CLOCK.

Check condensing unit / heat pump instructions for charging method.

Airflow



The blower motors are factory programmed with 5 torque settings, T1-T5. Both blowers operate at the same torque setting regardless of the unit's mode of operation. The unit is capable of operating at up to two independent torque settings depending on the mode of operation.

SPEED TAP	DESCRIPTION
1	AHRI RATING LOW SPEED COOLING (AC/HP) DEFAULT SPEED FOR G, Y1
2	AHRI RATING HIGH SPEED COOLING (AC/HP) DEFAULT SPEED FOR ALL, Y2
3	HIGH SPEED HEATING DEFAULT SPEED FOR HP, OR AC/HP WITH ELECTRIC HEAT
4	FAN ONLY
5	HIGH COOL, HIGHER SPEED

Prior to changing the torque settings, refer to airflow tables and heater kit CFM requirements to verify correct torques settings that satisfy the installation requirements. To change torque settings, turn the power off to the unit and move the yellow and/or brown wires to the desired torque tap (T1-T5). Refer to the wiring diagram provided with the unit for a visual aid.

Regular Maintenance

The only item to be maintained on a regular basis by the user is the circulating air filter(s). Filter should be cleaned or replaced regularly.

	WARNING
<p>HIGH VOLTAGE DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.</p>	
	

Routine maintenance is essential for trouble free operation of this airhandler. A few preseason checks can eliminate costly repairs and down time.

A certified service technician must perform all services mentioned below.

1. Check and change air filters as needed
2. Clean the evaporator coil and check for duct leaks.
3. Check for proper charge and (or) for refrigerant leaks.

If these few precautions are observed and maintained, this airhandler can provide years of trouble free service.

BLOWER PERFORMANCE TABLES
7.5 Ton LC Indoor Split System
Models: DAX0904

UPFLOW				
SPEED TAP	ESP (In H ₂ O)	SCFM	RPM	BHP
T1	0.1	2124	558	0.06
	0.2	1635	566	0.06
	0.3	1445	611	0.07
	0.4	1270	662	0.08
	0.5	1079	715	0.08
	0.6	855	765	0.09
	0.7			
	0.8			
T2	0.1	3069	727	0.21
	0.2	2953	761	0.22
	0.3	2843	794	0.23
	0.4	2731	829	0.24
	0.5	2594	869	0.25
	0.6	2453	909	0.26
	0.7	2310	947	0.27
	0.8	2189	981	0.28
T3	0.1	3069	727	0.21
	0.2	2953	761	0.22
	0.3	2843	794	0.23
	0.4	2731	829	0.24
	0.5	2594	869	0.25
	0.6	2453	909	0.26
	0.7	2310	947	0.27
	0.8	2189	981	0.28
T4	0.1	3456	794	0.29
	0.2	3343	825	0.30
	0.3	3242	856	0.31
	0.4	3137	886	0.32
	0.5	3024	919	0.33
	0.6	2907	953	0.34
	0.7	2780	988	0.36
	0.8	2659	1023	0.37
T5	0.1	3785	850	0.47
	0.2	3688	875	0.48
	0.3	3590	904	0.50
	0.4	3500	931	0.51
	0.5	3407	958	0.53
	0.6	3310	987	0.54
	0.7	3176	1021	0.56
	0.8	3050	1058	0.58


HORIZONTAL				
SPEED TAP	ESP (In H ₂ O)	SCFM	RPM	BHP
T1	0.1	2125	552	0.06
	0.2	1583	553	0.06
	0.3	1132	591	0.07
	0.4	911	653	0.07
	0.5			
	0.6			
	0.7			
	0.8			
T2	0.1	3125	708	0.20
	0.2	3006	746	0.21
	0.3	2910	778	0.22
	0.4	2805	810	0.23
	0.5	2690	844	0.24
	0.6	2553	882	0.25
	0.7	2414	919	0.26
	0.8	2295	953	0.27
T3	0.1	3125	708	0.20
	0.2	3006	746	0.21
	0.3	2910	778	0.22
	0.4	2805	810	0.23
	0.5	2690	844	0.24
	0.6	2553	882	0.25
	0.7	2414	919	0.26
	0.8	2295	953	0.27
T4	0.1	3509	776	0.28
	0.2	3395	809	0.29
	0.3	3300	839	0.30
	0.4	3203	869	0.31
	0.5	3102	899	0.33
	0.6	2990	931	0.34
	0.7	2876	963	0.35
	0.8	2765	995	0.36
T5	0.1	3869	838	0.46
	0.2	3757	867	0.48
	0.3	3662	896	0.49
	0.4	3559	924	0.51
	0.5	3470	951	0.53
	0.6	3377	979	0.54
	0.7	3282	1007	0.56
	0.8	3163	1040	0.57

BLOWER PERFORMANCE TABLES
10 Ton LC Indoor Split System
Models: DAX1204

UPFLOW				
SPEED TAP	ESP (In H ₂ O)	SCFM	RPM	BHP
T1	0.1	2527	622	0.17
	0.2	2396	663	0.18
	0.3	2239	711	0.19
	0.4	2086	754	0.20
	0.5	1936	795	0.21
	0.6	1804	833	0.22
	0.7	1672	870	0.23
	0.8	1507	903	0.24
T2	0.1	4020	894	0.55
	0.2	3913	921	0.57
	0.3	3815	948	0.59
	0.4	3728	974	0.60
	0.5	3621	1000	0.62
	0.6	3533	1026	0.63
	0.7	3441	1055	0.65
	0.8	3328	1088	0.67
T3	0.1	3785	850	0.47
	0.2	3688	875	0.48
	0.3	3590	904	0.50
	0.4	3500	931	0.51
	0.5	3407	958	0.53
	0.6	3310	987	0.54
	0.7	3176	1021	0.56
	0.8	3050	1058	0.58
T4	0.1	4488	975	0.56
	0.2	4385	997	0.57
	0.3	4291	1021	0.58
	0.4	4210	1046	0.60
	0.5	4130	1069	0.61
	0.6	4050	1092	0.62
	0.7	3972	1115	0.64
	0.8	3893	1138	0.65
T5	0.1	4601	1005	0.81
	0.2	4501	1031	0.83
	0.3	4408	1055	0.85
	0.4	4329	1078	0.87
	0.5	4252	1102	0.89
	0.6	4175	1124	0.91
	0.7	4099	1148	0.93
	0.8	4022	1171	0.95


HORIZONTAL				
SPEED TAP	ESP (In H ₂ O)	SCFM	RPM	BHP
T1	0.1	2576	618	0.16
	0.2	2460	661	0.18
	0.3	2328	702	0.19
	0.4	2173	747	0.20
	0.5	2016	789	0.21
	0.6	1867	832	0.22
	0.7	1717	875	0.23
	0.8	1514	920	0.25
T2	0.1	4094	879	0.54
	0.2	3978	906	0.56
	0.3	3888	932	0.58
	0.4	3800	959	0.59
	0.5	3728	985	0.61
	0.6	3640	1010	0.63
	0.7	3553	1035	0.64
	0.8	3460	1062	0.66
T3	0.1	3869	838	0.46
	0.2	3757	867	0.48
	0.3	3662	896	0.49
	0.4	3559	924	0.51
	0.5	3470	951	0.53
	0.6	3377	979	0.54
	0.7	3282	1007	0.56
	0.8	3163	1040	0.57
T4	0.1	4519	956	0.55
	0.2	4416	982	0.56
	0.3	4324	1006	0.57
	0.4	4245	1031	0.59
	0.5	4164	1056	0.60
	0.6	4087	1079	0.62
	0.7	4008	1103	0.63
	0.8	3934	1126	0.64
T5	0.1	4723	983	0.80
	0.2	4623	1006	0.81
	0.3	4536	1031	0.83
	0.4	4453	1055	0.85
	0.5	4373	1079	0.87
	0.6	4294	1103	0.89
	0.7	4219	1125	0.91
	0.8	4143	1148	0.93

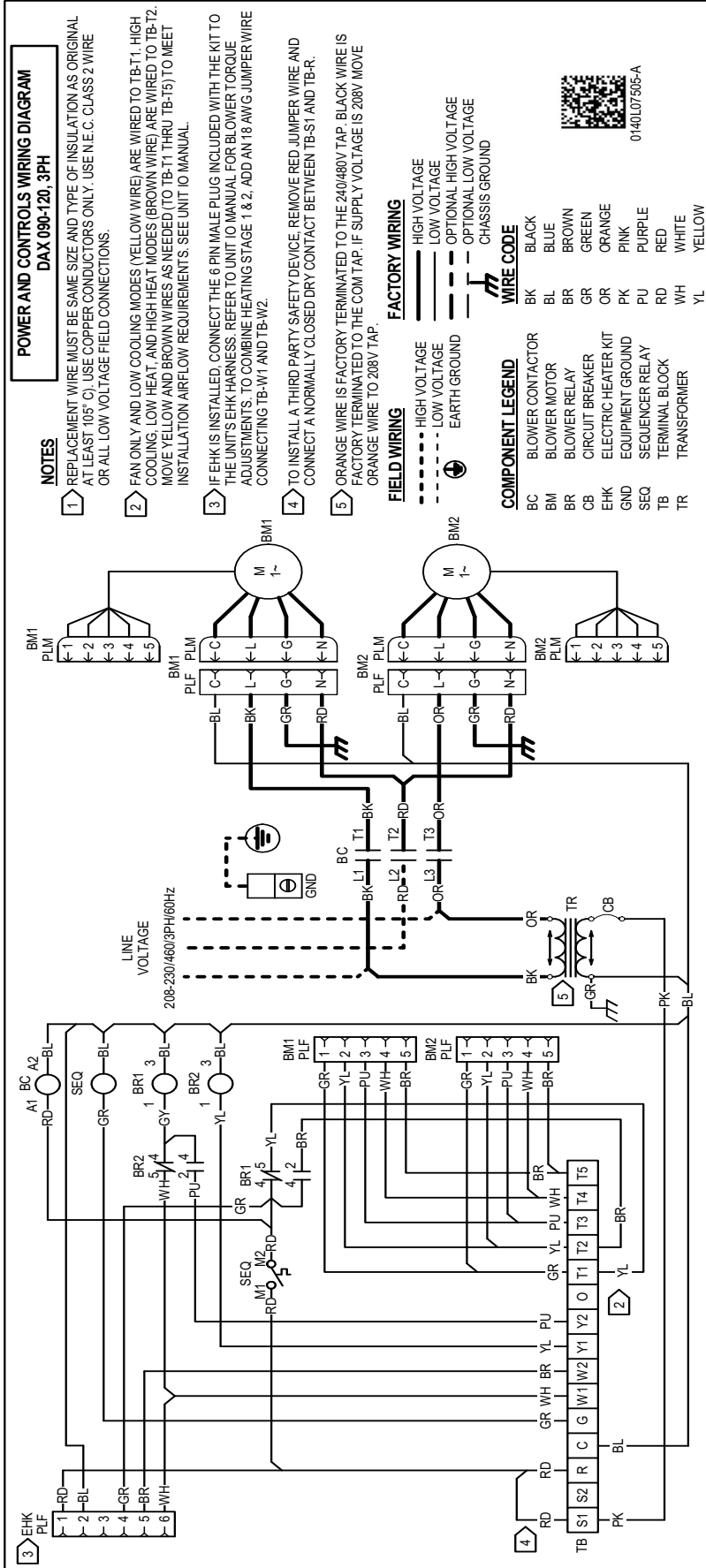
WIRING DIAGRAM



WARNING

HIGH VOLTAGE!
DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT.
MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.






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Wiring is subject to change. Always refer to the wiring diagram on the unit for the most up-to-date wiring.


SPLITS LOW VOLTAGE DIAGRAM



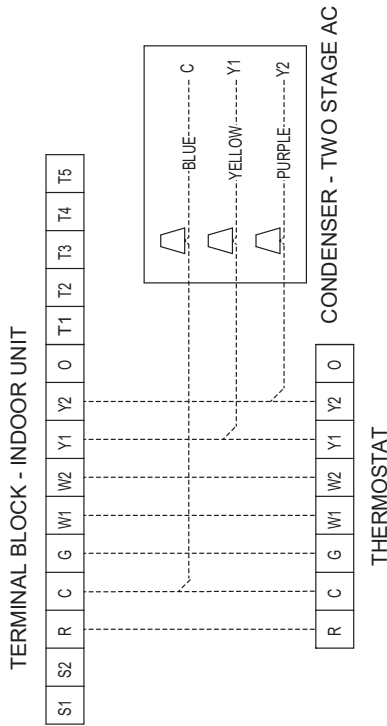
WARNING

HIGH VOLTAGE!

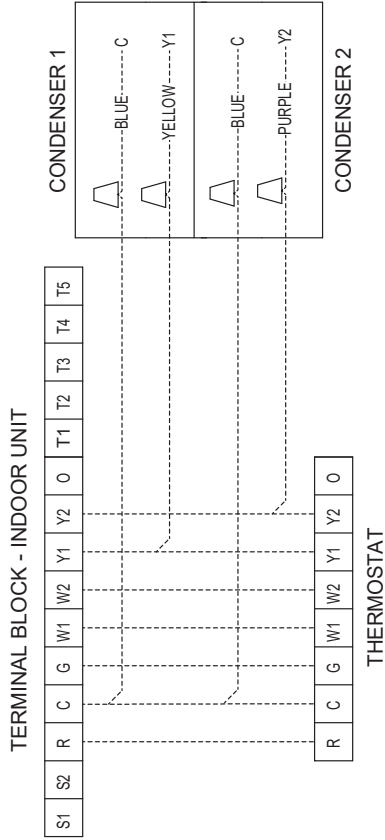
DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT.
MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY
CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.



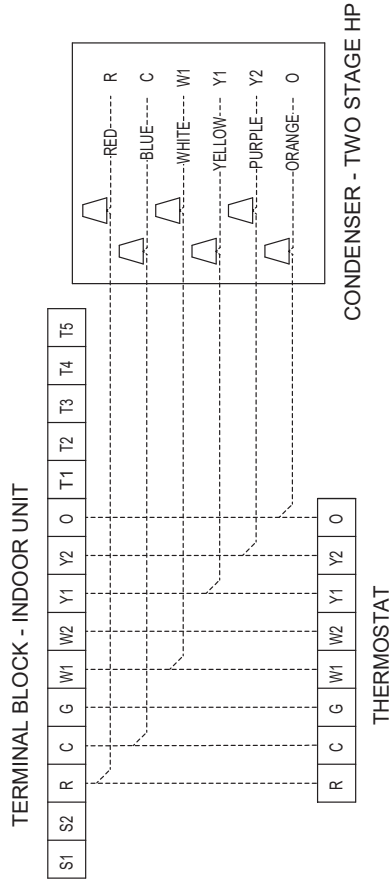
1 TWO-STAGE CONDENSER UNIT



2 ONE-STAGE CONDENSER UNITS



1 TWO-STAGE HEAT PUMP UNIT



LOW VOLTAGE FIELD WIRING DAX 090-120, 3PH

NOTE:
THIS IS A SYSTEM WIRING DIAGRAM SHOWING DAX MODEL SERIES WITH FIELD CONNECTIONS. THIS DIAGRAM IS TO BE INCLUDED IN INSTALLATION INSTRUCTIONS. A SEPARATE WIRING DIAGRAM IS CONTAINED INSIDE THE CONTROL BOX FOR UNIT FACTORY WIRING.

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