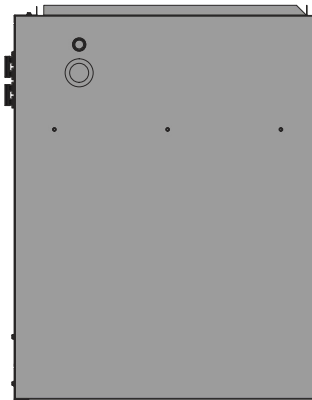
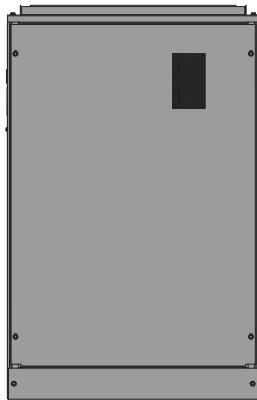


GENERAL

The EFM/ELB Series is designed for permanent upflow, counterflow, or horizontal left/right airflow installation. Optional DX coils are available that which allows for add on of a DX air conditioning and heat pump applications to meet specific requirements of the outdoor equipment. The EFM/ELB Series are available in several models ranging from 600 CFM to 2000 CFM of air movement. Electric resistance heat is available from 3kW to 20kW.



IMPORTANT: AllStyle Coil Company is not responsible for any water damage to property. Proper safety pans and drain lines must be installed.

⚠ WARNING: Do not operate this unit unless all service panels/access doors are in place. If unit is located in the same area as the water heater or boiler, then the return air must be ducted to the unit. Seal all service entrances to the unit to prevent combustible byproducts from the water or boiler entering the air stream.

Installation of this unit shall be made in accordance with the National Electric Code, NFPA No. 90A and 90B, and any other local codes or utilities requirements.

⚠ WARNING: Due to possible damage to equipment or personal injury, installation, service and maintenance should be performed by a qualified technician. Consumer service is recommended only for filter replacement.

⚠ WARNING: Ensure all power is disconnected before installing or servicing this unit. More than one disconnect device may be required to de-energize the equipment. Hazardous voltage can cause severe personal injury. Make certain all panels are in place before operating this unit.

UNPACKING

Carefully unpack the unit and inspect the contents for damage. If any damage is found at the time of delivery, proper notification and claims should be made with the carrier who delivered the unit.

Check the unit rating plate to ensure model number and voltage, plus any kits agree with what you ordered. The manufacturer should be notified immediately of any discrepancy of parts or shortage.

LOCATION

The blower coil unit should be centrally located and may be installed in an attic, basement, or crawlspace with 0" clearance from any side, front, rear, or duct work. The unit must be installed in a level position to ensure proper condensation drainage. Make sure the unit is level in both directions within 1/8".

NOTE: If the unit is located above a finished ceiling or living space, an auxiliary safety drain pan must be

INSTALLATION GUIDE

installed under the unit. A separate drain line must be installed from the pan.

The unit must be installed in a level position to ensure proper condensation drainage. Make sure the unit is level in both directions within 1/8”.

When the unit is installed in an enclosed area, the room should be large enough, and have an opening large enough to allow replacement of the unit. All servicing is done from the front and a clearance of 24” is needed for service.

CAUTION

If the unit you are installing is in an unconditioned space such as an attic or crawlspace, you must ensure the area provides sufficient air circulation to prevent moisture collection on the cabinet during high dew point conditions. A drain pan must be installed under the entire unit when it is installed above a finished ceiling or location in an unconditioned space.

DUCT WORK

The duct work should be installed in accordance with the NFPA No. 90A “Installation of Air Conditioning and Ventilating Systems” and No. 90B “Residential Type Warm Air Heating and Air Conditioning Installation”.

The duct work should be insulated in accordance with the applicable requirements for the particular type installation as required by HUD, FHA, VA, the applicable building code, local utility or other governing body.

REFRIGERANT PIPING

Refrigerant pipe connections are located on the top of the unit. Refrigerant piping external to the unit shall be sized in accordance with the instructions of the manufacturer of the outdoor equipment. When units are recessed in the wall, make certain that piping connections are pressure tested prior to the wall being closed.

WIRING

Consult all schematic and pictorial wiring diagrams of this unit and the outdoor equipment to determine compatibility of the wiring connections and to determine specific requirements.

All field wiring to the blower coil should be installed in accordance with the latest edition of the National Electric

Code NFPA No. 70 and any local codes.

Check rating plates on unit for rated volts, minimum circuit ampacity and maximum over current protection. Supply circuit power wiring must be 75°C (167°F) minimum copper conductors only. Copper supply wires shall be sized to the National Electric Code or local code requirements, whichever is more stringent. The unit is shipped wired for 115/120 or 230/240 Volt AC 60Hz 1 Phase operation. If the unit is to be operated at 208 VAC 60 Hz, then follow the instructions on the indoor unit wiring diagram to change the low voltage transformer to 208 VAC operation.

Be sure the unit is properly grounded.

Class 2 low voltage control wiring should not be run in conduit with the power wiring unless class 1 wire of proper voltage rating is used. Low voltage control wiring should be 18 Awg, color coded (105°C minimum). For lengths longer than 100ft., 16 Awg wire should be used. Make certain that separation of control wiring and power wiring has been maintained.

BLOWER

This unit is supplied with a multi-speed motor with a direct drive blower wheel which can obtain various air flows. As an option a ECM motor is also available. This motor provides variable speeds, at a constant torque, with a brushless DC motor. The unit is shipped with the blower connected for high speed. If a lower blower speed is required, disconnect all power to the unit, remove the black indoor fan motor lead from the fan relay, place an insulated cap on the black lead, remove the insulated cap from the red indoor fan motor lead, place a spade connector on the lead and connect it to the fan relay where the black lead was originally connected. Be sure to check the air flow and the temperature drop across the evaporator coil to ensure that you have sufficient air flow.

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AIR FILTER

An air filter must be installed prior to the air entering the evaporator coil to protect the coil, blower, and other internal parts from excessive dirt and dust. If the unit is recessed and mounted in a wall utilizing the optional wall mount return filter grille, be sure to install a filter in the panel. The door must be securely fastened in place to ensure proper filtration of the return air. Change the filter every 30 days or as soon as dust or dirt appears on the filter.

THERMOSTAT

Select a thermostat that is commonly referred to as a single stage cooling with electric heat sub base. This stat will energize the fan on a demand for heat or cool.

Install the T-Stat on an inside wall, away from the drafts, lights, or other heat sources in a location that has good air circulation from the other rooms being controlled by the T-Stat. The T-Stat should be mounted 4 to 5 feet above the floor.

Refer to the wiring diagram in the back of this manual for complete wiring instructions.

SEQUENCE OF OPERATION

Cooling (Cooling only or heat pump with reversing valve energized in heat mode): When the T-Stat calls for cooling, the circuit between R and G is complete, and the blower relay is energized. The N.O. contacts will close, which allows the indoor blower to operate. The circuit between R and Y is completed causing the contactor on the outdoor equipment to close, and start the compressor and the outdoor fan motor. The circuit between R and Y is completed causing the contactor on the outdoor equipment to close, and start the compressor and the outdoor fan motor.

Cooling (Heat pump with reversing valve energized in cooling mode): When the thermostat calls for cooling, the circuit between R and G and R and O is complete. Circuit R and O energizes the reversing valve to the cooling position. Circuit R and G energizes the blower relay. The N.O. contacts will close after a time delay then the indoor blower will operate. The circuit between R and Y is complete. Which causes the contactor on the outdoor equipment to close, and

the start the compressor and the outdoor fan motor.

Heating (Electric heat only): When the thermostat calls for heat, the circuit between R and W is completed. The heat sequencer is energized. A time delay will occur, which allows the heating element(s) and the indoor blower motor to come on.

Heating (Heat pump reversing valve energized in the heat mode): When the thermostat calls for heat the circuits between R and B, R and Y and R and G are completed. Circuit R and B energize the reversing valve switching it to the heat position. Circuit R and Y energized the outdoor unit contactor starting the compressor and outdoor fan. Circuit R and G energizes the blower relay starting the blower motor.

If the indoor room temperature should continue to fall, circuit R and W2 is by the second-stage heat bulb on the thermostat. Circuit R-W2 energizes the heat sequencer. The complete circuit will energize the supplemental electric heat.

Blower Time Delay: This unit is equipped with timed on and a timed off relay. This relay delays the start and delay the stopping of the indoor fan motor to maximize the efficiency of the unit.

Defrost. When the unit starts the defrost cycle supplemental heat can be provided by connecting B on the blower coil to the defrost relay on the outdoor heat pump. This will complete the circuit between R and B (in the blower coil) through a set of contacts in the defrost relay in the outdoor unit. This circuit when it is connected, will help prevent cold air from being discharged from the indoor unit during the defrost.

START-UP

Once all connections are complete the unit should be started up, and a check out of the completed system should be performed. Before performing any system test, make sure that all grilles, registers, and dampers are open and set to the correct position. Also make certain that the air filter is installed in the return air prior to running the air handler.

A performance test should be conducted in the accordance with the outdoor equipment manufacturer's instructions. Airflow tests should be conducted in the

INSTALLATION GUIDE

heating and cooling modes to ensure satisfactory operation.

MAINTENANCE

The system air filter(s) should be inspected, cleaned or replaced at least monthly. If the filter is mounted internal to unit, make sure that electrical power is disconnected before removing the access panels. Make certain the access panels are replaced and secured properly before placing the unit back in operation. This product is designed for dependable service, however periodic maintenance should be scheduled to be conducted by trained professional service personnel. This service should be conducted at least annually, and should include testing and inspection of electrical and refrigerant components. The heat transfer surface should be cleaned. The blower motor is permanently lubricated for normal operating conditions.

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WARNING



Do not store or use any corrosives or combustibles in the vicinity of this unit. All panels must be in place and properly secured before operating this equipment.

All electrical power servicing this unit must be disconnected prior to removal of any panels. Service of this unit must be accomplished by qualified trained professional personnel only.



WARNING

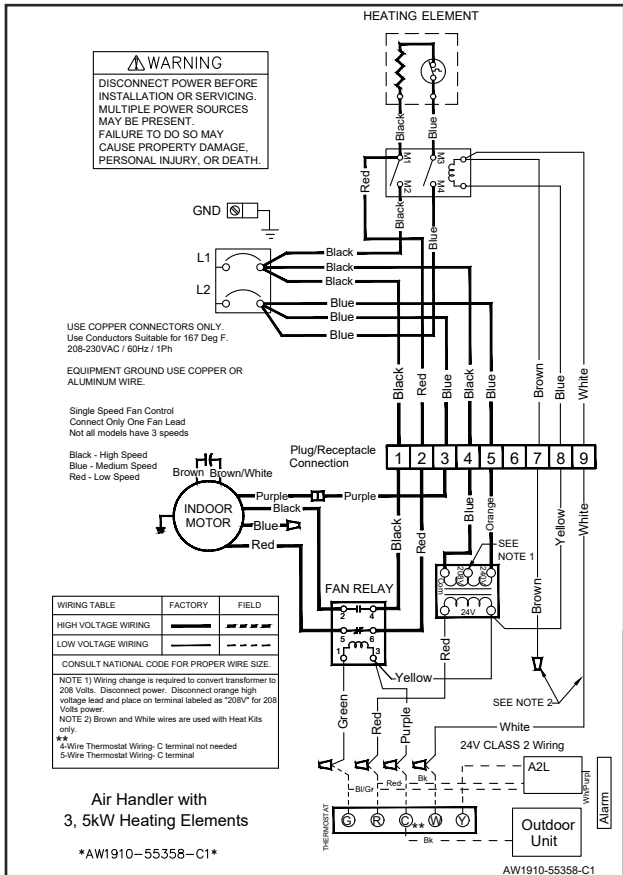
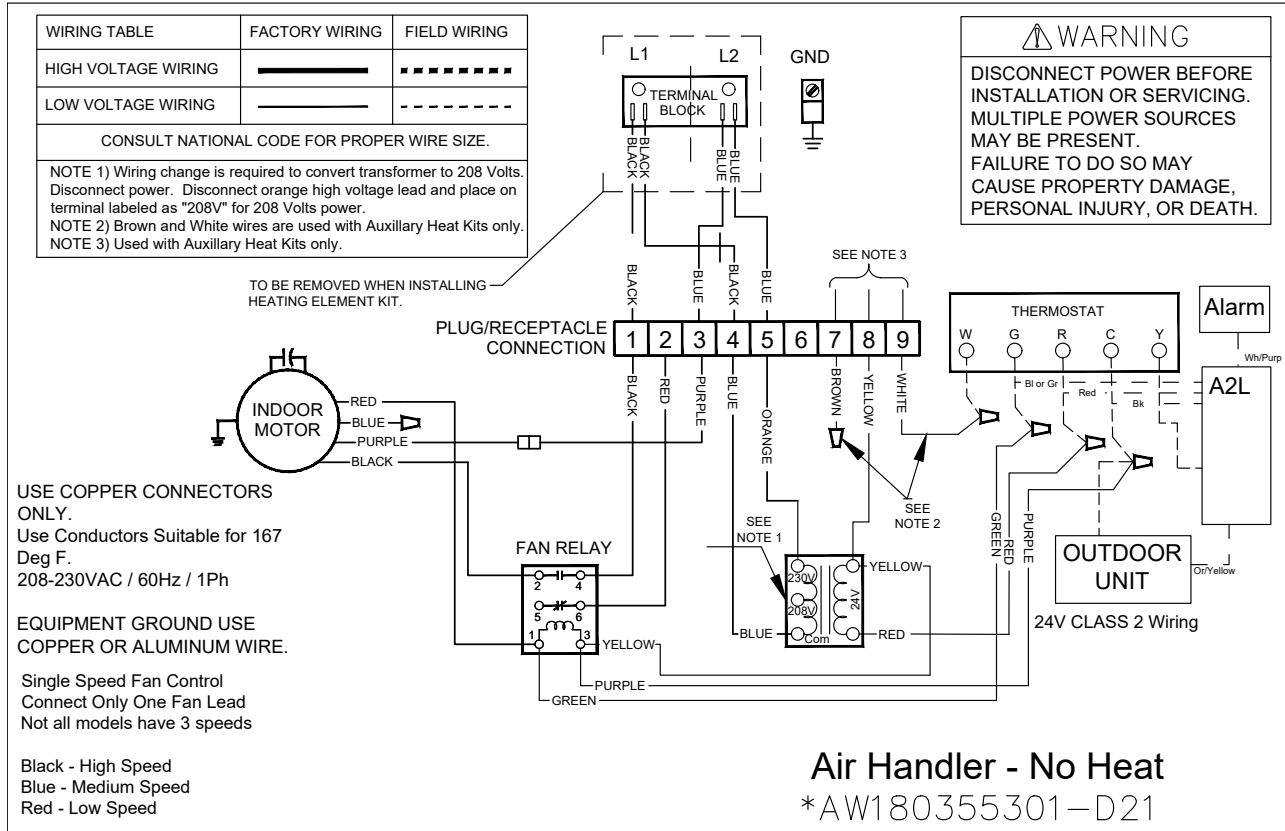


Warranty will be voided if any chemical cleaning products are used on any AllStyle coils. AllStyle suggests water and a soft, bristled brush.

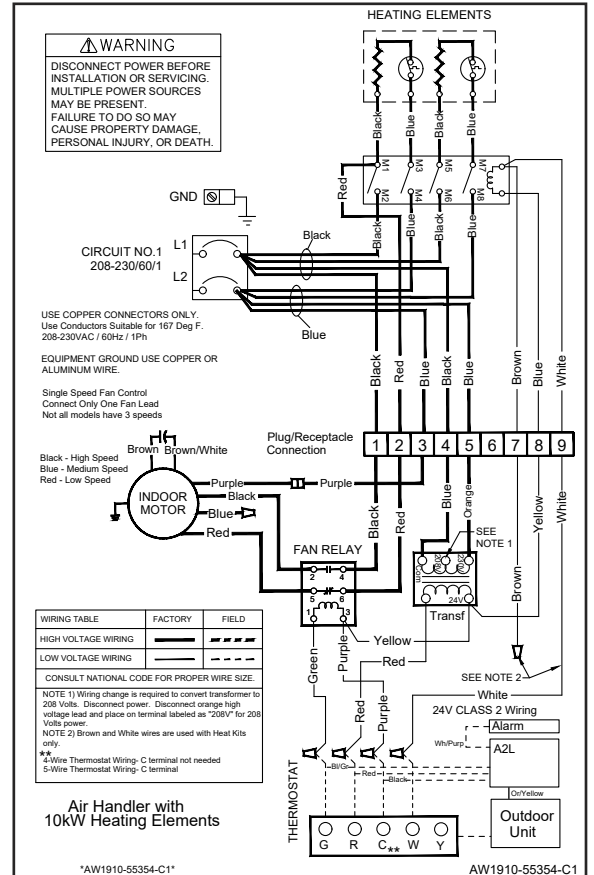
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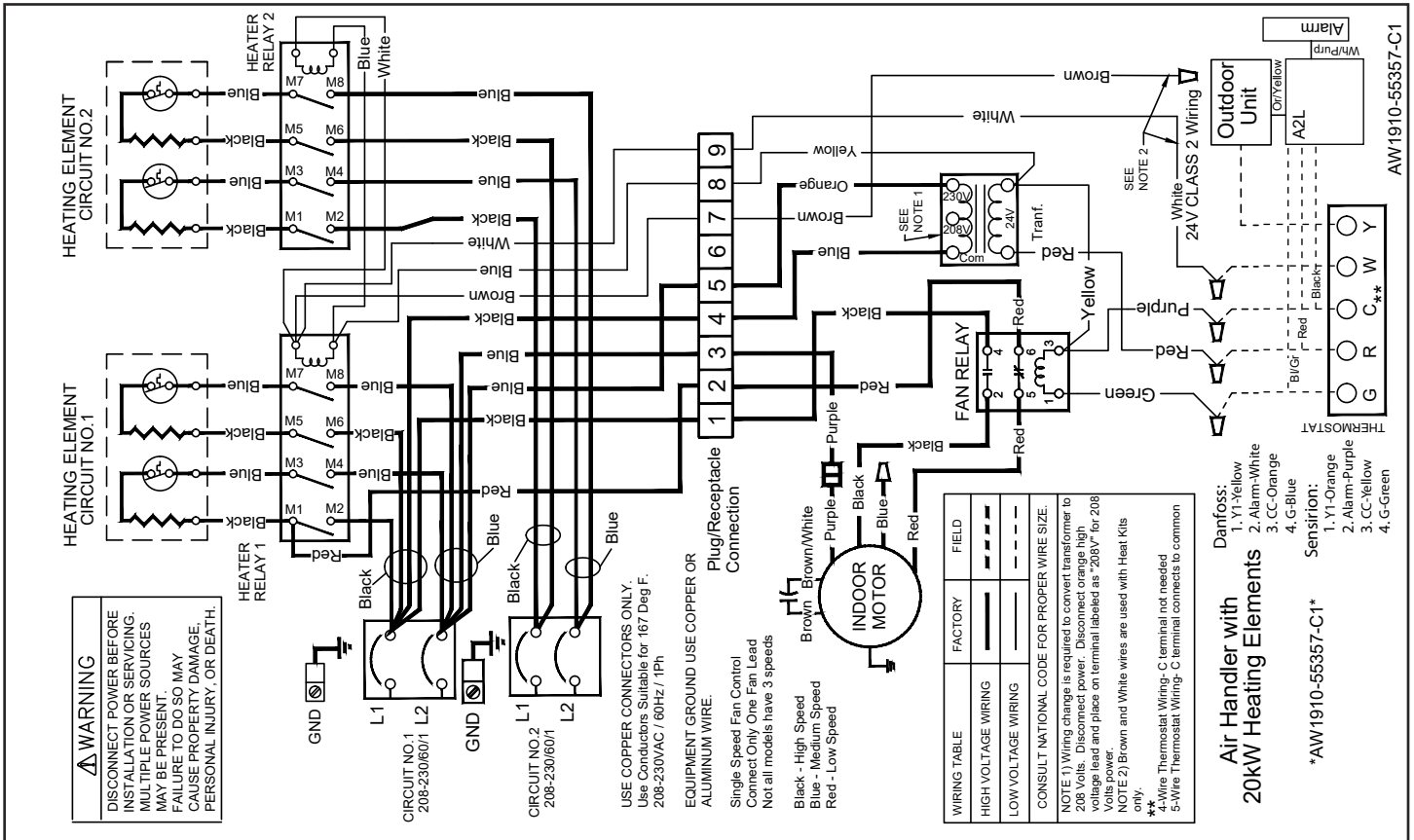
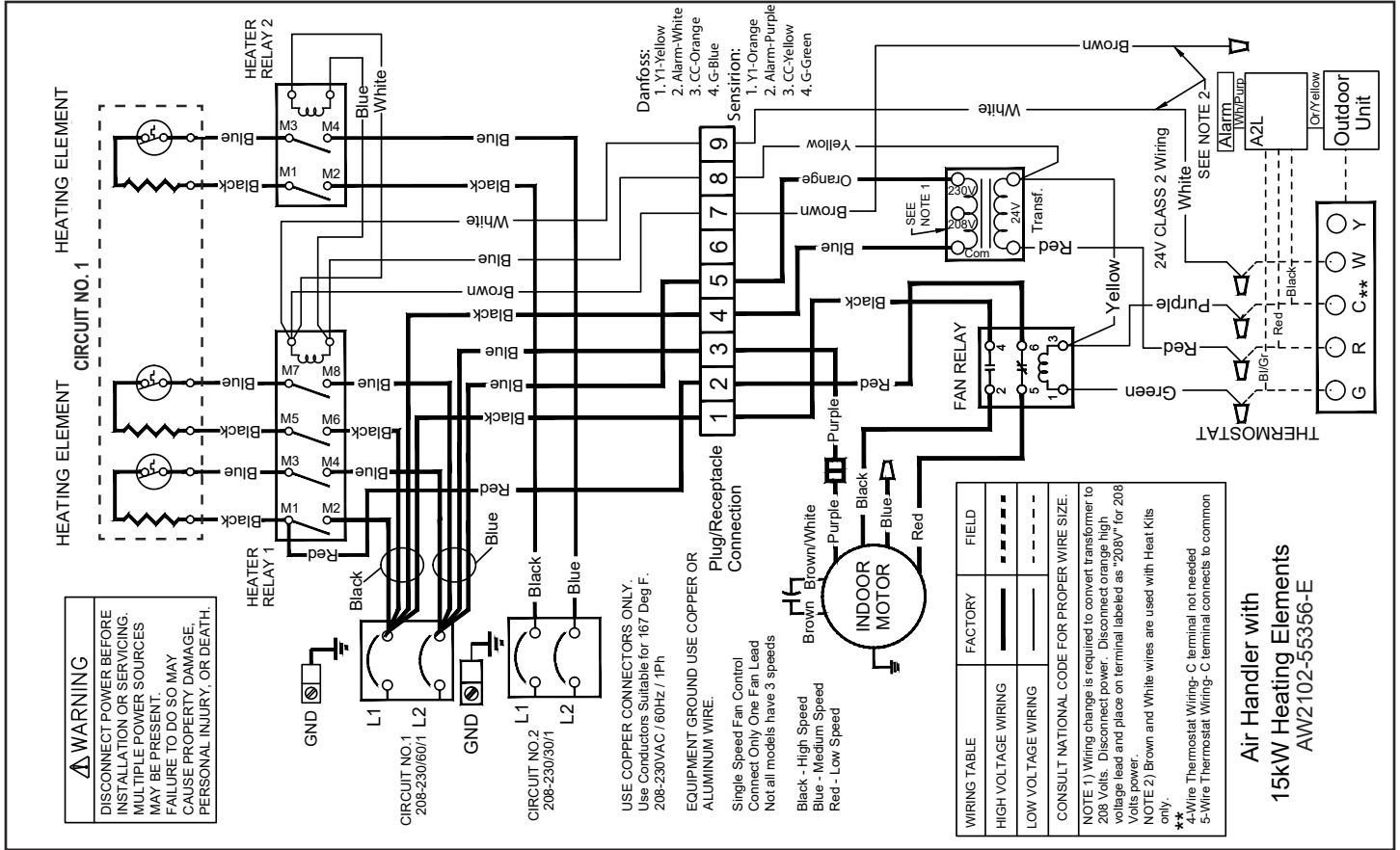
WIRING DIAGRAM



- Danfoss:**
1. Y1-Yellow
 2. Alarm-White
 3. CC-Orange
 4. G-Blue
- Sensirion:**
1. Y1-Orange
 2. Alarm-Purple
 3. CC-Yellow
 4. G-Green



WIRING DIAGRAM



WIRING DIAGRAM

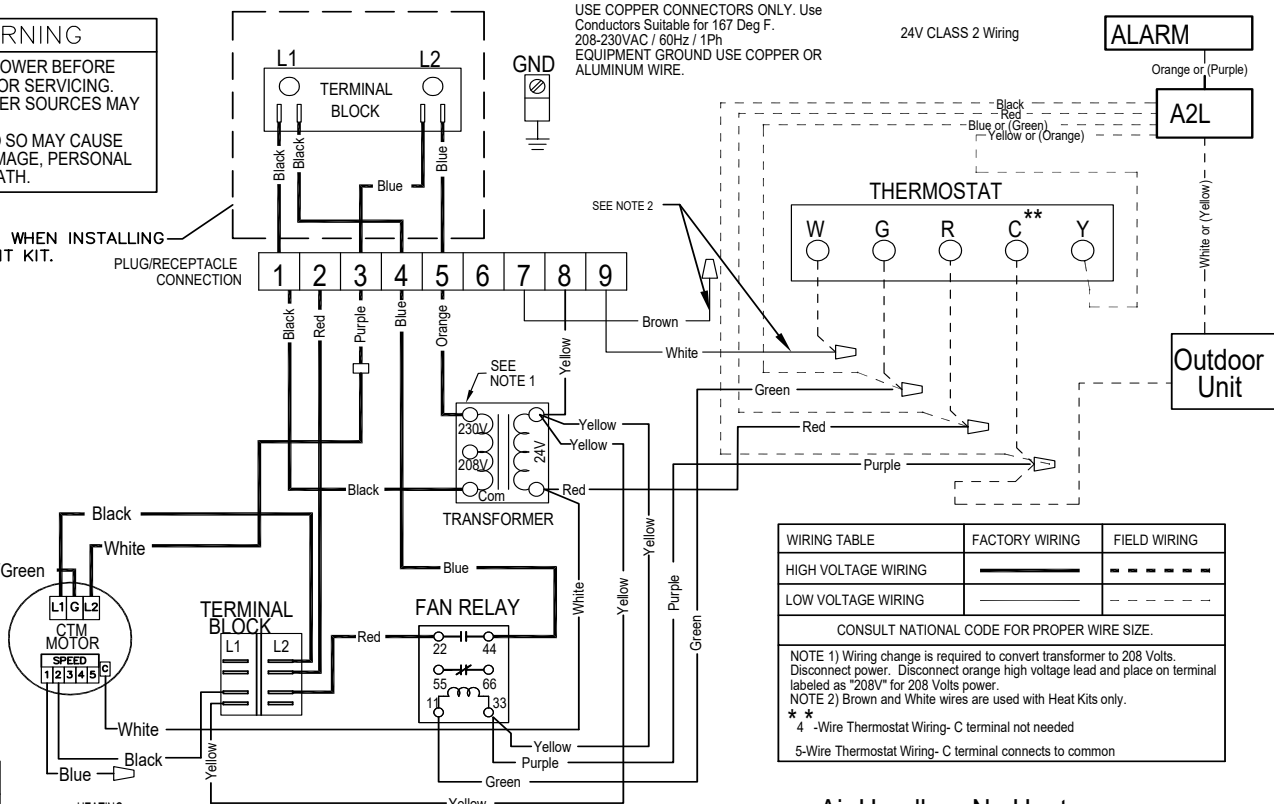
WARNING
DISCONNECT POWER BEFORE INSTALLATION OR SERVICING. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY, OR DEATH.

TO BE REMOVED WHEN INSTALLING HEATING ELEMENT KIT.

USE COPPER CONNECTORS ONLY. Use Conductors Suitable for 167 Deg F. 208-230VAC / 60Hz / 1Ph EQUIPMENT GROUND USE COPPER OR ALUMINUM WIRE.

24V CLASS 2 Wiring

ALARM

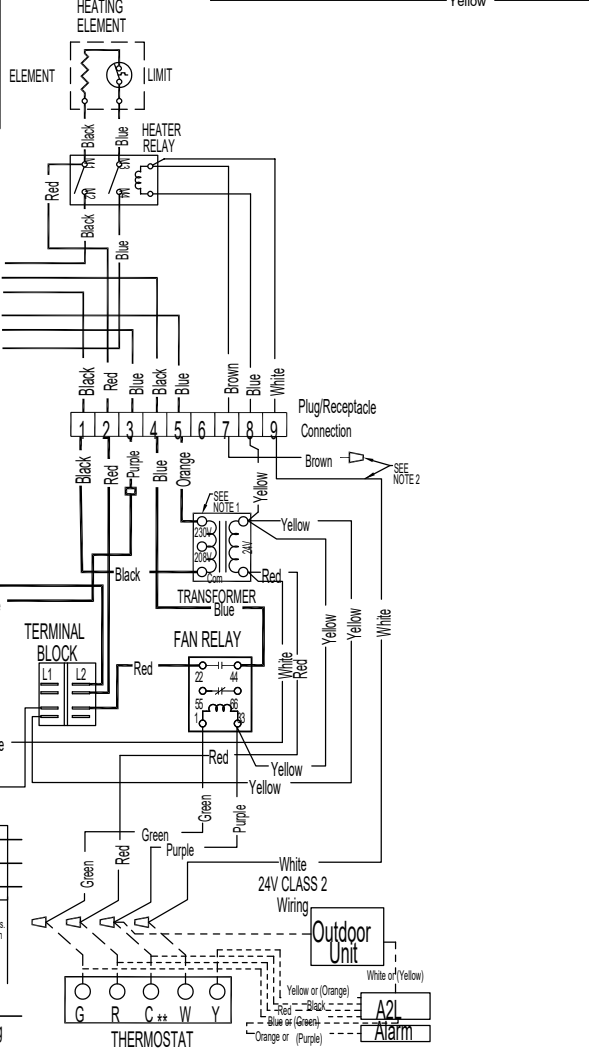


WIRING TABLE	FACTORY WIRING	FIELD WIRING
HIGH VOLTAGE WIRING	—————	-----
LOW VOLTAGE WIRING	—————	-----

CONSULT NATIONAL CODE FOR PROPER WIRE SIZE.

NOTE 1) Wiring change is required to convert transformer to 208 Volts. Disconnect power. Disconnect orange high voltage lead and place on terminal labeled as "208V" for 208 Volts power.
NOTE 2) Brown and White wires are used with Heat Kits only.
* *
4 -Wire Thermostat Wiring- C terminal not needed
5-Wire Thermostat Wiring- C terminal connects to common

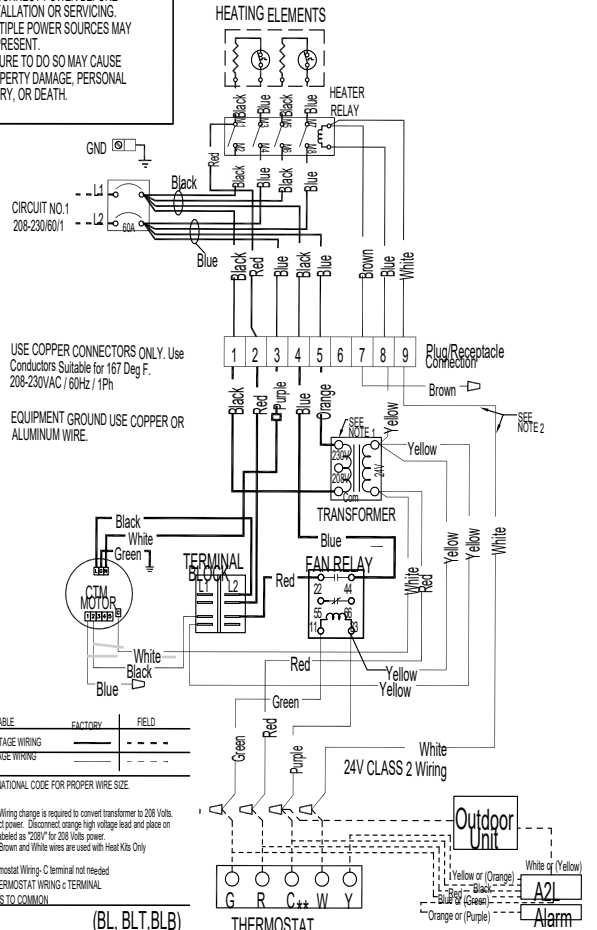
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Air Handler - No Heat CTM Nan-Feng

AW2003-55453-A



WIRING TABLE	FACTORY	FIELD
HIGH VOLTAGE WIRING	—————	-----
LOW VOLTAGE WIRING	—————	-----

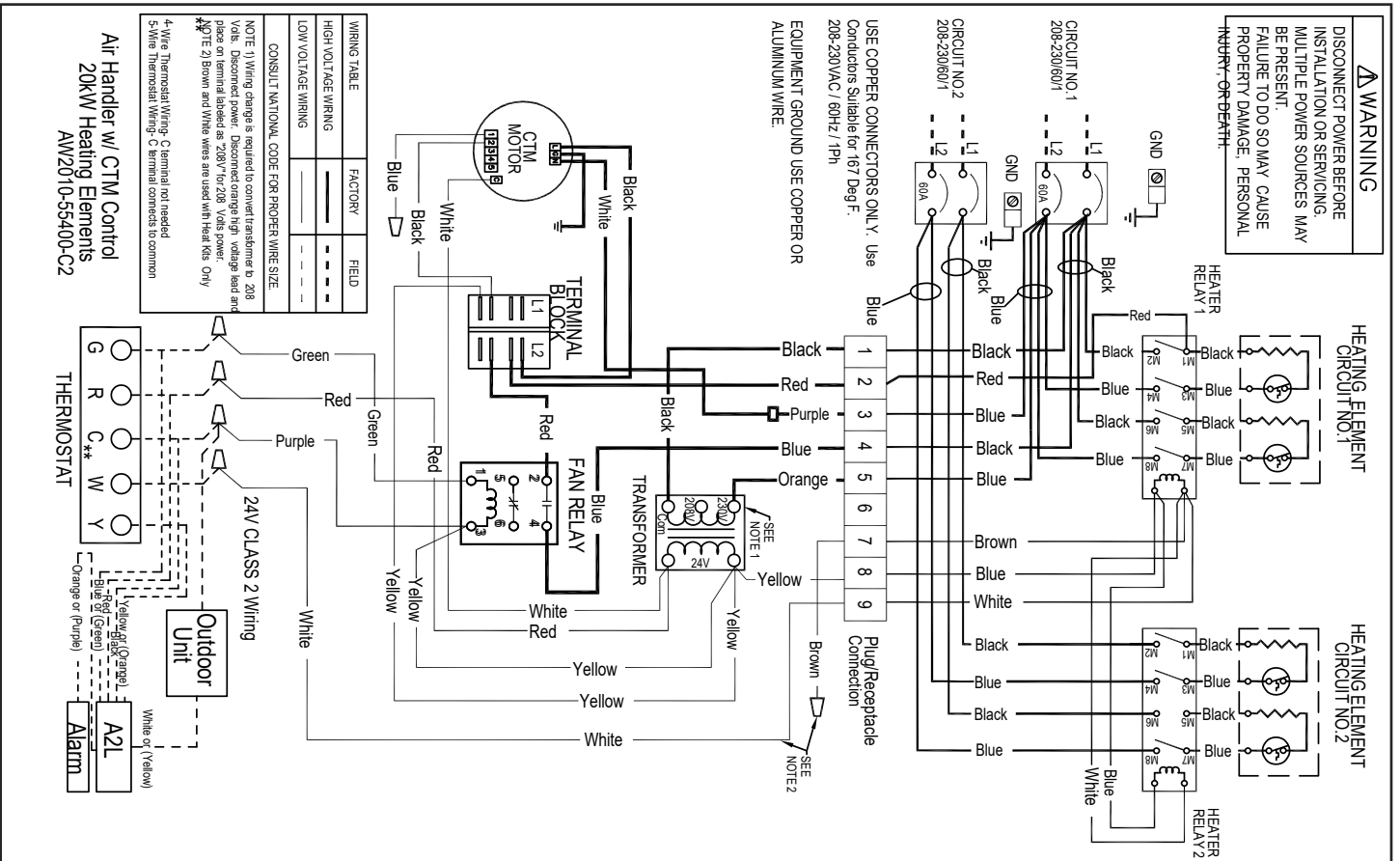
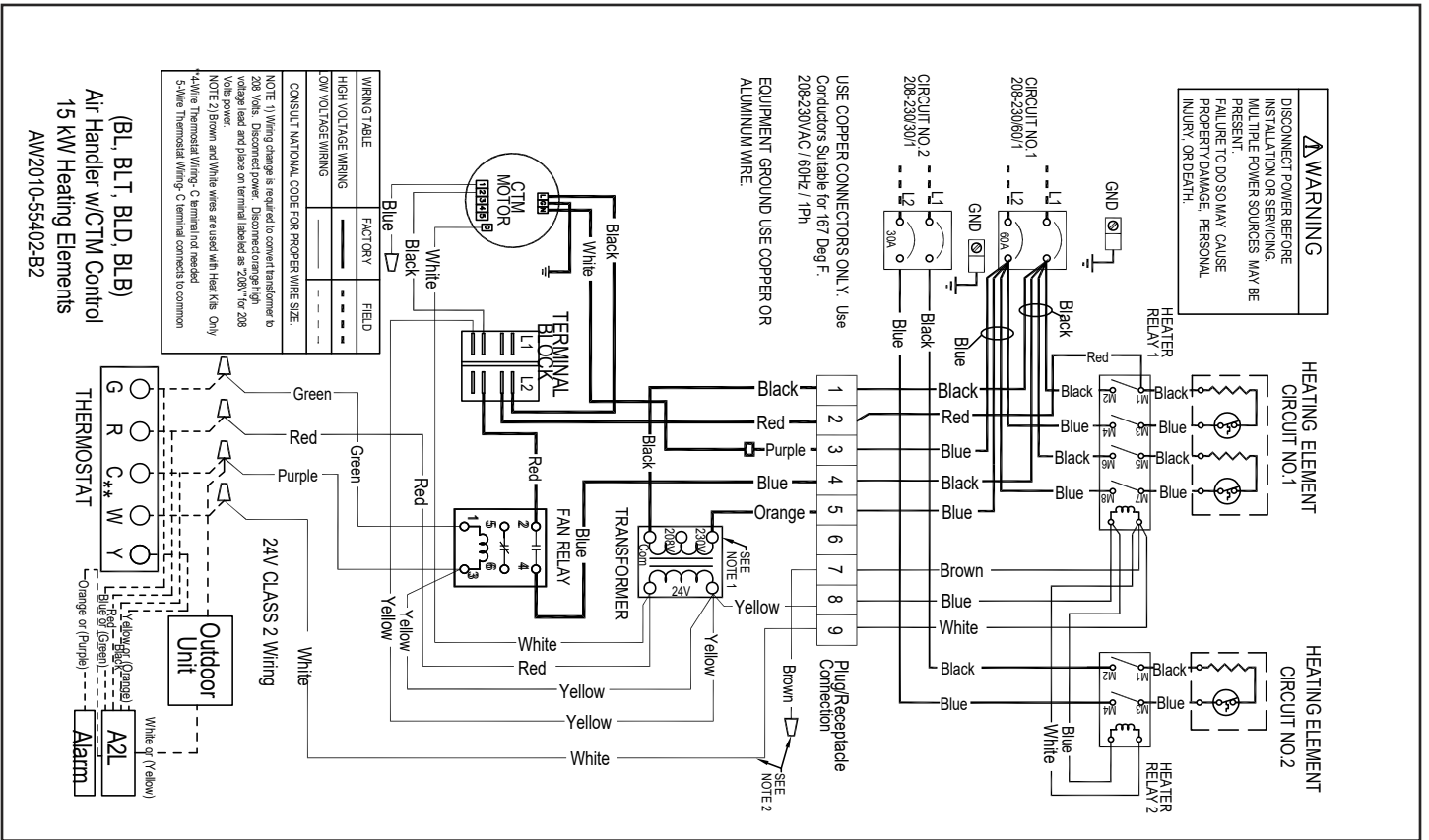
CONSULT NATIONAL CODE FOR PROPER WIRE SIZE.

NOTE 1) Wiring change is required to convert transformer to 208 Volts. Disconnect power. Disconnect orange high voltage lead and place on terminal labeled as "208V" for 208 Volts power.
NOTE 2) Brown and White wires are used with Heat Kits Only
* *
4-Wire Thermostat Wiring- C terminal not needed
5-WIRE THERMOSTAT WIRING- C TERMINAL CONNECTS TO COMMON

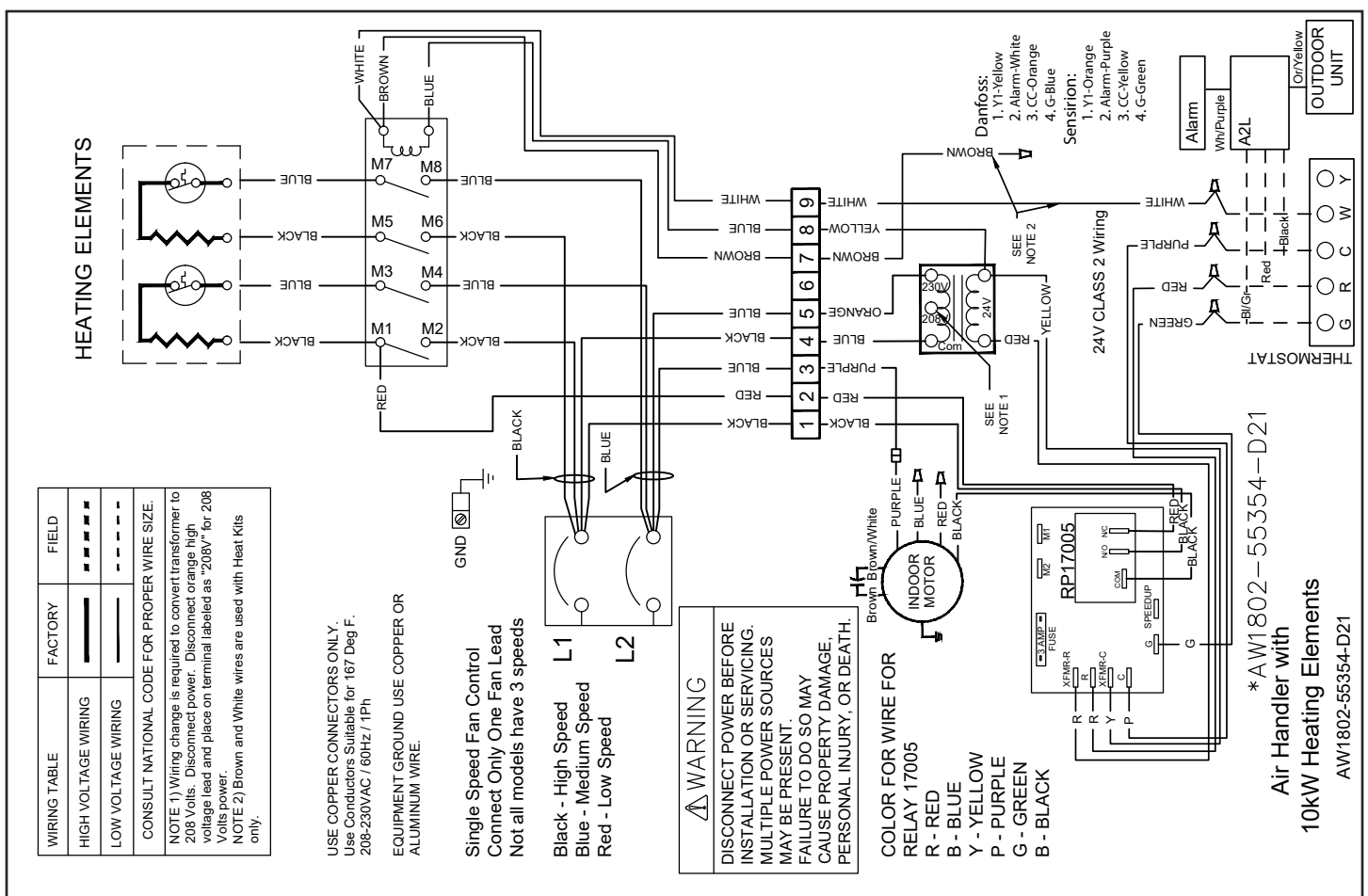
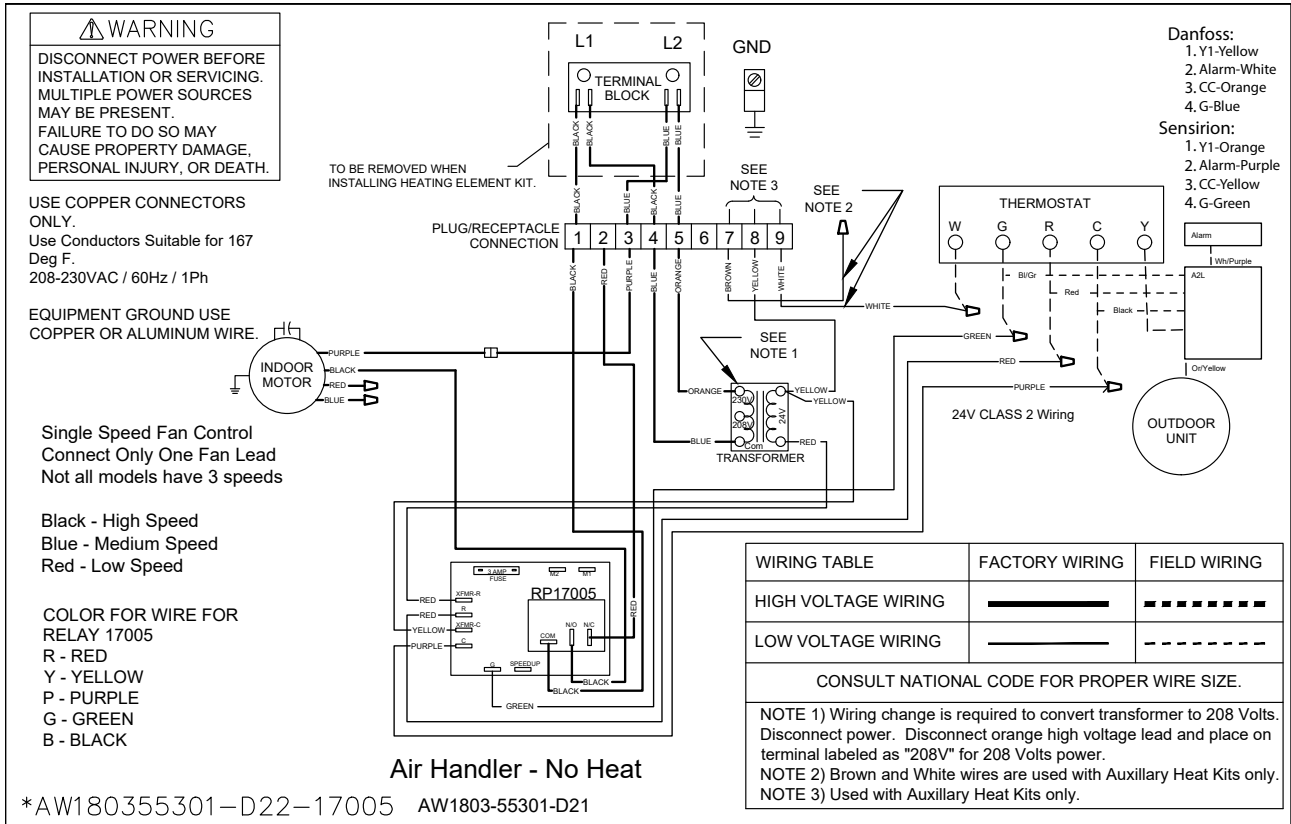
BL, SL Air Handler with CTM Nan-Feng
3, 5 kW Heating Elements
AW2003-55460-A

(BL, BLT, BLB)
Air Handler with CTM Control
6, 8, 10 kW Heating Elements
AW1910-55431-A2

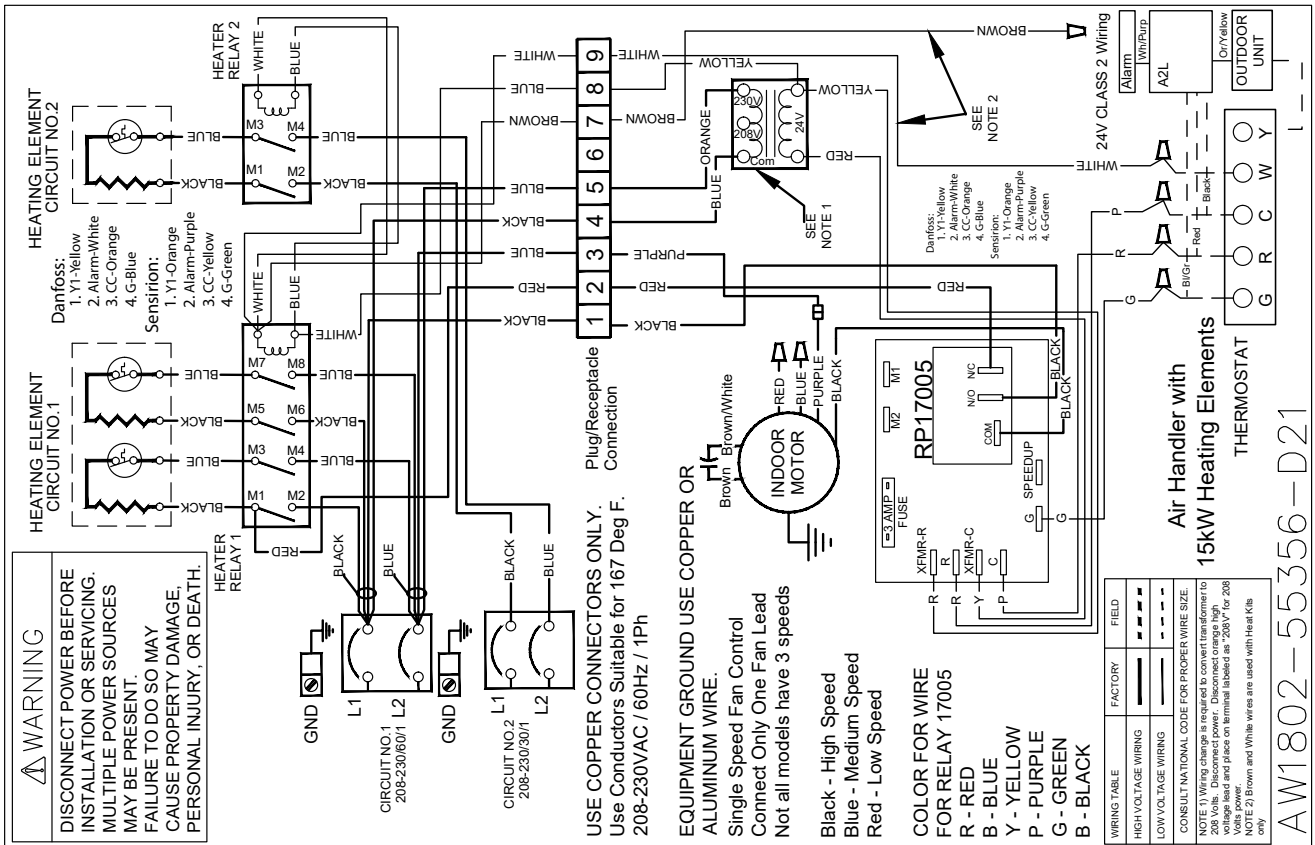
WIRING DIAGRAM



WIRING DIAGRAM

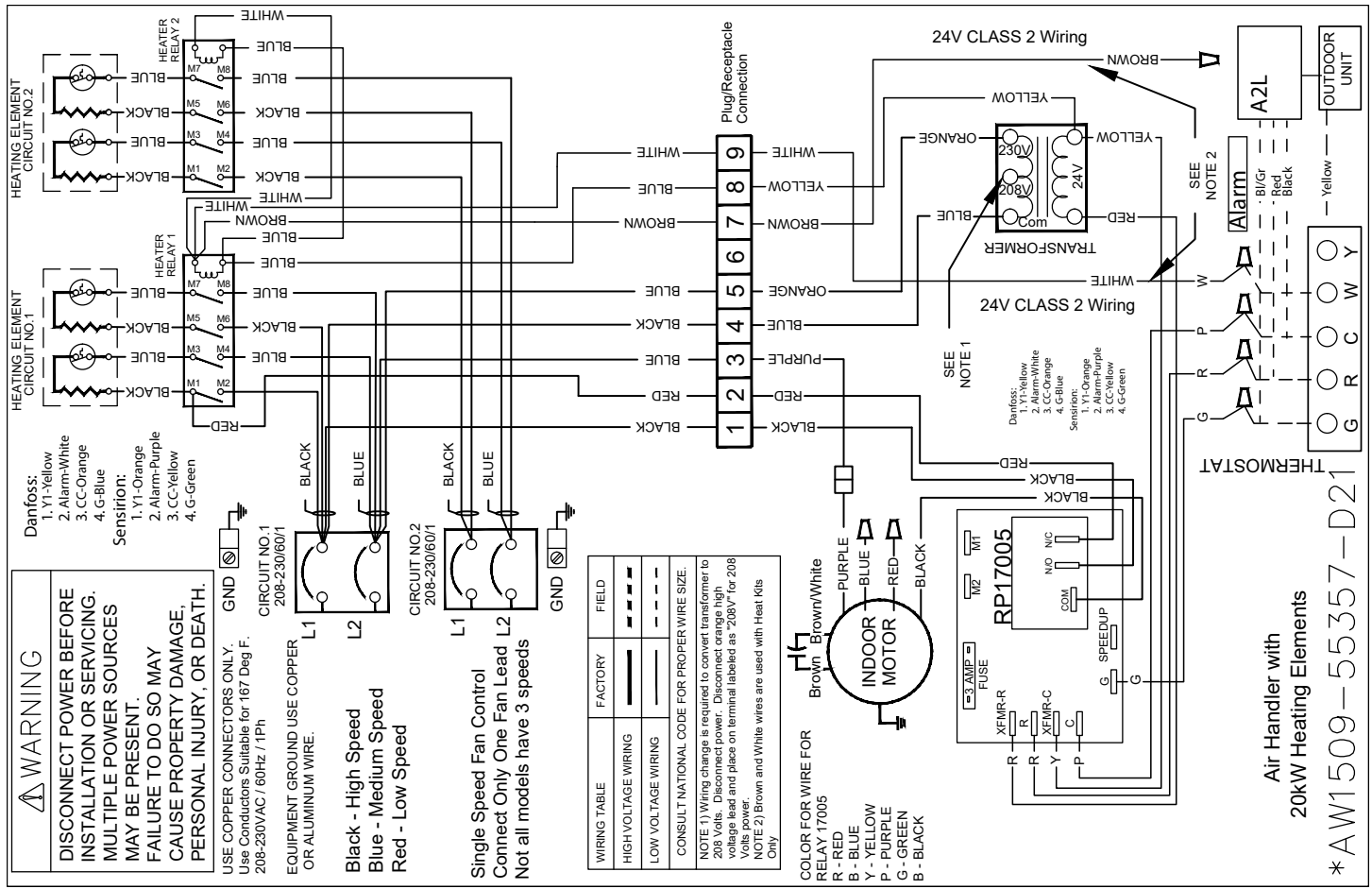


WIRING DIAGRAM



Air Handler with 15kW Heating Elements
THERMOSTAT

AW1802-55356-D21



Air Handler with 20kW Heating Elements
THERMOSTAT

*AW1509-55357-D21



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