

# ***Installation Instructions and Homeowner's Manual***

# **SUPREME**

Fournaise électrique / Electric Furnace

**MODULATING  
(ECM MOTOR)**

***MULTI POSITION***



**INSTALLER / SERVICE TECHNICIAN:**

USE THE INFORMATION IN THIS MANUAL FOR THE INSTALLATION AND SERVICING OF THE FURNACE AND KEEP THE DOCUMENT NEAR THE UNIT FOR FUTURE REFERENCE.

**HOMEOWNER:**

PLEASE KEEP THIS MANUAL NEAR THE FURNACE FOR FUTURE REFERENCE.

**Models:**

**SUPXX-M240V12  
SUPXX-M240V20**



**Caution:** Do not tamper with the unit or its controls. Call a qualified service technician.

Manufactured by:

**Industries Dettson inc.**  
Sherbrooke, Quebec - Canada

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# 1-SAFETY

## 1.1- DANGER, WARNING AND CAUTION

The words **DANGER**, **WARNING** and **CAUTION** are used to identify the levels of seriousness of certain hazards. It is important that you understand their meaning. You will notice these words in the manual as follows:



### **DANGER**

**Immediate hazards which WILL result in death or serious bodily and/or material damage.**



### **WARNING**

**Hazards or unsafe practices which CAN result in death or serious bodily and /or material damage.**



### **CAUTION**

**Hazards or unsafe practices which CAN result in minor bodily and /or material damage.**

## 1.2- IMPORTANT INFORMATION



### **WARNING**

**Non-observance of the safety regulations outlined in this manual will potentially lead to consequences resulting in death, serious bodily injury and/or property damage.**



### **WARNING**

**Installation and repairs performed by unqualified persons can result in hazards to them and to others. Installations must conform to local codes or, in the absence of such codes, to codes of the country having jurisdiction.**

**The information contained in this manual is intended for use by a qualified technician, familiar with safety procedures and who is equipped with the proper tools and test instruments.**

**Failure to carefully read and follow all instructions in this manual can result in death, bodily injury and/or property damage.**

- It is the homeowner's responsibility to engage a qualified technician for the installation and subsequent servicing of this furnace;
- Do not use this furnace if any part of it was under water. Call a qualified service technician immediately to assess the damage and to replace all critical parts that were in contact with water;
- Do not store gasoline or any other flammable substances, such as paper or carton near the furnace;
- Never block or otherwise obstruct the filter and/or return air openings;

- Ask the technician installing your furnace to show and explain to you the following items:
  - The main disconnect switch or circuit breaker;
  - The air filter and how to change it (check monthly and clean or replace if necessary);
- Before calling for service, be sure to have the information of section 5 of your manual close by in order to be able to provide the contractor with the required information, such as the model and serial numbers of the furnace.

**IMPORTANT:** All local and national code requirements governing the installation of central electric heating equipment, wiring and the flue connection MUST be followed. Some of the codes that may apply are:

**ANSI/NFPA 70:** National Electrical Code

**CSA C22.1 or CSA C22.10:** Canadian Electrical Code

Only the latest issues of these codes may be used, and are available from either:

The National Fire Protection Agency

1 Batterymarch Park

Quincy, MA 02269

or

The Canadian Standards Association

178 Rexdale Blvd.

Rexdale, Ontario M9W 1R3

## 1.3- DANGER OF FREEZING



### **CAUTION**

**If your furnace is shut down during the cold weather season, water pipes may freeze, burst and cause serious water damage. Turn off the water supply and bleed the pipes.**

If the heater is left unattended during the cold weather season, take the following precautions:

- Close the main water valve in the house and purge the pipes if possible. Open all the faucets in the house;
- Ask someone to frequently check the house during the cold weather season to make sure that there is sufficient heat to prevent the pipes from freezing. Tell this person to call an emergency number if required.

# 2-INSTALLATION

This furnace is a true multi-position unit, in that it will function in an upflow, downflow or horizontal configuration to the left or the right. Only a few modifications are required during installation to change from one position to another. The unit is shipped in the upflow configuration and instructions as to how to change to the other positions are included in this manual.

The unit requires a 120/240 - 208 VAC power supply to the control panel, thermostat hook-up as shown on the wiring diagram.

## 2.1- POSITIONING THE FURNACE



### WARNING

**Fire and explosion hazard.**

The furnace must be installed in a level position, never where it will slope toward the front.

Do not store or use gasoline or any other flammable substances near the furnace.

Non-observance of these instructions will potentially result in death, bodily injury and/or property damage.



### CAUTION

This furnace is not watertight and is not designed for outdoor installation. It must be installed in such a manner as to protect its electrical components from water. Outdoor installation will lead to a hazardous electrical condition and to premature failure of the equipment.

If the furnace is installed in a basement or on a dirt floor, in a crawl space for example, it is recommended to install the unit on a cement base 2.5 cm to 5.0 cm (1" to 2") thick.

In addition, the heater should also be located close to the center of the air distribution system.

## 2.2- CLEARANCES TO COMBUSTIBLE MATERIAL

### 2.2.1- Heating unit

The furnace is approved for zero clearance to combustible material regardless of the heating capacity.

### 2.2.2- Supply air ducts

Ducts can be installed with a zero clearance to combustible material.

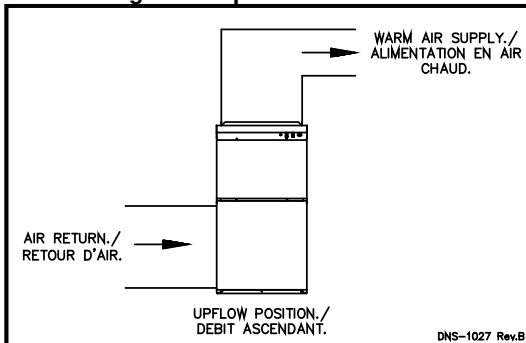
## 2.3- CONFIGURATIONS

This furnace requires suitable ductwork.

### 2.3.1- Upflow installation

The return duct may be installed to the back, to the bottom, on the left side, or on the right side of the unit. The supply duct shall be installed on the top of the unit. Care should be taken not to damage the wires inside while cutting the opening. Install the filter rack supplied with the unit according to the instructions provided with it. It is also recommended to install the blower door before handling or moving the unit.

Figure 1: Upflow installation

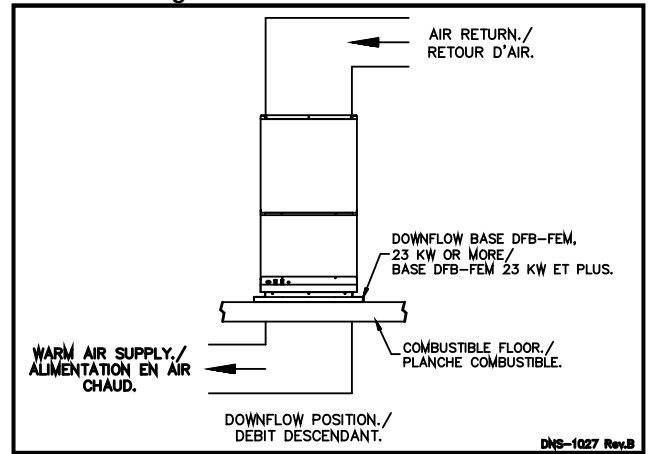


### 2.3.2- Downflow installation

The return duct may be installed to the back, on the left side, on the right side or under the unit. The supply duct shall be installed on the top of the unit.

When the furnace is installed in the downflow position on a combustible floor. The downflow base DFB-SUP can be used. Refer to Figure 2 and the installation instructions provided with the base.

Figure 2: Downflow installation

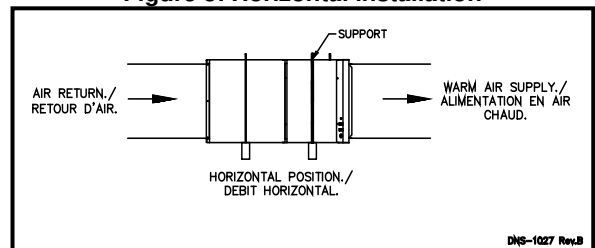


### 2.3.3- Horizontal installation

The return duct may be installed to the back, on the left side, on the right side or under the unit. The supply duct shall be installed on the top of the unit.

When the furnace is installed in the horizontal position, either suspended or on a combustible floor with a choice of right or left discharge, the clearances from combustible material must be adhered to. Refer to Figure 3 for additional details.

Figure 3: Horizontal installation



## 2.4- ELECTRICAL SYSTEM

The SUPREME furnace is completely pre-wired and all field wiring must be connected to the terminal blocks on the unit. It requires a 120/240 - 208 volt.



### WARNING

**Risk of fire.**

**The conductor sizing must conform to the last edition of the local or national codes.**

**Failure to follow this rule can result in death, bodily injury and/or property damage.**

Power supply to the unit can be done using copper or aluminum wires. The wire size must be decided in accordance to the unit power consumption, the over current protection type and capacity, the wire type and length, and the environment where

the unit is installed. If an aluminum wire is used, other precautions must be taken to insure the conformity of the installation. In all cases, all the factors affecting the wire gauge must be considered and the installation codes followed.

The exterior of the unit must have an uninterrupted ground to minimize the risk of bodily harm. A ground terminal is supplied with the control box for that purpose. A connector is supplied on the ground terminal to ground an added accessory.

In the event that wires inside the unit require replacement, these must be copper wires only with same temperature rating and sizes as originals.

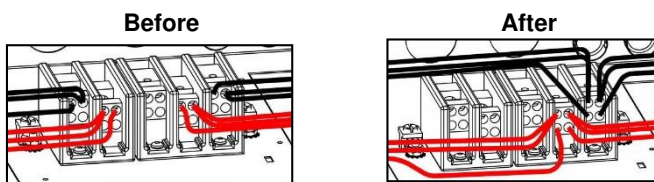
#### 2.4.1- Conversion from two to one supply wires for model over 27kW

**Warning** – When using one terminal block on models over 27kW, the installation must be performed with copper wire ONLY in order to comply with the Canadian electrical code. The usage of an aluminum or copper wire is acceptable on models 25kW and lower.

Move all wires from the two pole terminal to the three pole terminal following the corresponding colors as shown in Figure 4.

The breaker and the supply conductors must be sized by adding the ampacities of the two terminals indicated on the nameplate. Refer to the electrical diagram Figure 7.

**Figure 4 : Conversion from two to one supply wires**



### 2.5- INSTALLATION OF THE THERMOSTAT

#### 2.5.1- Communicating thermostat with Alizé system

The thermostat must be connected to terminals 1, 2, R and C of the furnace. The interface board must be installed as specified in the supplied manual and connected with the RJ11 wire also supplied with the interface board.

#### 2.5.2- Modulating thermostat

The thermostat must be connected to V/W2, C, R, G terminals and optionally to Y1, Y2, O and DH terminals if there are options of cooling or heat pump.

#### 2.5.3- Ducts and filters

The ducts must be sized such a way as to accommodate the specified airflow and the available static pressure. Refer to the applicable local and/or national installation codes.

Insulate the ducts that lead through non-heated areas. Use flexible supply and return air connectors to avoid the transmission of vibration. To make the unit run even quieter, the installer should:

- a. Use two elbows between each outlet and the supply and return air plenum;

- b. Cover the vertical sections of the supply and return air duct with soundproofing material;
- c. Use baffles in short radius elbows;
- d. Use flexible hangers to suspend the ducts.

The SUPREME furnace is equipped with a filter frame for the blower compartment. It must be installed on the outside of one of the three sides or the bottom of the furnace. Once the location of the installation has been determined, use the four square knockouts for ease of cutting the opening.

A heat pump or an air conditioner can be added to this furnace, in either the supply or return air duct. Carefully follow the instructions provided with these appliances to ensure proper installation and hook-up to the electric furnace. Refrigerant and drainage pipes must in no way hinder access to the furnace panels.

### 2.6- SUPPLY AIR ADJUSTMENTS

#### 2.6.1- Airflow selection in electrical heating (identified as « RISE » on the control card

The installer must check the adjustment of the ventilation air (adjusted in factory) that is required for the electrical power (kW) of the unit.

The desired temperature rise can be adjusted in the installer menu by modifying the value of the “RISE” parameter. The furnace will modify its air supply in order to approximately keep this temperature rise.

#### 2.6.2- Airflow selection in cooling and heat pump mode (identified as “AC/HP SIZE” on the control card; for systems with non-communicating condenser only)

In the “Installer” menu, the “AC/HP size” line enables to select the outdoor unit capacity.

#### 2.6.3- Airflows adjustments (“AC/HP CFM ADJUST”; for systems with non-communicating condenser only)

In the “Installer” menu, modify the C\_T\_A line to change the number of CFM per ton to be between 300 and 500.

#### 2.6.4- Delay ON/OFF (“ON/OFF DELAY”; for non-communicating condenser system only)

It is possible to modify “Fan ON” and “Fan OFF” periods in order to improve the system comfort and efficiency. The delay of activation for the fan in cooling or heat pump mode can be modified by the “ON\_AC\_D\_A” variable of the “Installer” menu. The deactivation menu is modified by changing the “OFF\_AC\_D\_A” value

#### 2.6.5- Continuous fan (for non-communicating condenser systems only)

The continuous fan demand can be adjusted between 5 and 100% by changing the “C\_F\_R” value in the “Installer” menu.

#### 2.6.6- Low voltage circuit: fuses and connections

The low voltage circuit is protected by an auto-reset electronic fuse placed in series with the SEC2 transformer and the R circuit. The C circuit of the transformer is connected to the earth ground.

## 2.7- INSTALLATION OF ACCESSORIES



### WARNING

**Electrical shock hazard.**

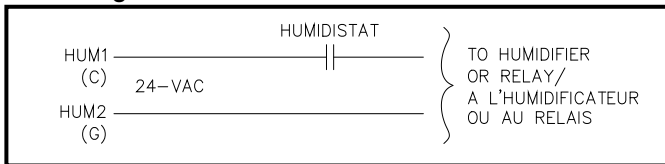
**Turn OFF electrical power at the fuse box or service panel before making any electrical connection and ensure that a proper ground connection is made before connecting line voltage.**

**Failure to do so can result in death or bodily injury.**

### 2.7.1- Humidifier and humidistat connection

Fan Control Board terminals HUM1 (directly connected internally to C on terminal block) and HUM2 (directly connected internally to G on terminal block) are provided for direct connections to the low-voltage control of a humidifier through a standard humidistat (refer to Figure 5). These terminals are energized with 24 VAC when G thermostat signal is present.

**Figure 5 : Standard humidistat connections**



### connection

Latent capacities for systems using this unit are better than average systems. If increased latent capacity is an application requirement, the field wiring terminal block provides a connection terminal (DH) for use of a standard humidistat. The furnace control will detect the humidistat contact opening on increasing humidity and reduce its airflow to approximately 80% of nominal cooling mode airflow. This reduction will increase the system latent capacity until the humidity falls to a level which causes the humidistat contact to close its contacts.

### 2.7.3- Use of a heat pump

When using a heat pump, a thermostat with dual fuel option or a fossil fuel kit is required that prevents the operation of the electric elements and the heat pump at the same time. Refer to the instructions provided with the thermostat or the "Fossil Fuel" kit for the proper wiring of the furnace and the heat pump.

The simultaneous operation of the electric elements and the heat pump will cause overheating of either unit. The safety controls of the appliances will shut down the elements or heat pump, since they are not designed to function in this fashion.

## 3- OPERATION

### 3.1- START-UP

Before starting up the unit, be sure to check that the following items are in compliance:

1. The electrical installation and ventilation;
2. The blower access door is in place and the blower rail locking screws are well tightened;

3. The blower speed adjustments for heating and air conditioning are appropriate and according to the specifications in this manual;
4. The thermostat of the room is in heating mode and is set higher than the ambient temperature.
5. The breakers on front panel are set on the "ON" position  
To start the unit, turn the main electrical switch on.

### 3.2- OPERATING SEQUENCE

Also, the blower motor is a true variable speed motor designed to deliver constant CFM. Constant CFM is valid for systems with total external static pressure between 0.1 and 0.8 inches water column.

#### 3.2.1- Continuous fan

- Thermostat closes circuit R to G.
- Blower runs at continuous fan airflow.

#### 3.2.2- Cooling mode – single stage

- If indoor temperature is above temperature set point and humidity is below humidity set point, thermostat closes circuits R to G, R to Y/Y2 and R to O.

**NOTE:** For single stage systems, do not use the Y1 terminal.

- Furnace delivers single stage cooling airflow.

#### 3.2.3- Cooling mode – two stage

- First stage (low) cooling: Thermostat closes circuits R to G, R to O, and R to Y1.
- Furnace delivers low stage cooling airflow.
- Second stage (high) cooling: Thermostat closes circuits R to G, R to O, R to Y1 and R to Y/Y2.
- Furnace delivers high stage cooling airflow.

#### 3.2.4- Cooling mode – dehumidification

- If indoor temperature is above temperature set point and humidity is above humidity set point, thermostat closes circuits R to G, R to Y/Y2 and R to O and humidistat opens circuit R to DH.
- The furnace delivers airflow which is approximately 80% of the nominal cooling airflow to increase the latent capacity of the system.

#### 3.2.5- Electrical heating mode – modulating thermostat

The thermostat sends a heating demand in the form of a pulse width modulated wave that varies between 5 and 100%. The heating unit will apply this power ratio to the maximum available power. The electrical elements will modulate to the required power and the fan will adjust itself automatically in order to reach the required temperature rise.

#### 3.2.6- Heat pump heating mode – modulating thermostat, outdoor unit single stage

- Thermostat closes circuits R to G and R to Y/Y2.

**NOTE:** For single stage systems, do not use the Y1 terminal.

- Furnace delivers single stage heat pump heating airflow.

### 3.2.7- Heat pump heating mode – modulating thermostat, outdoor unit two stage

- a. First stage (low) heating: Thermostat closes circuits R to G and R to Y1.
- b. Furnace delivers low stage heating airflow.
- c. Second stage (high) heating: Thermostat closes R to G, R to Y1 and R to Y/Y2.
- d. Furnace delivers high stage heating airflow.



## WARNING

### Electrical shock or unit damage hazard

Failure to carefully read and follow this WARNING could result in equipment malfunction, property damage, personal injury and/or death.

Disconnect power to unit before removing or replacing connectors or servicing motor. Wait at least five (5) minutes after disconnecting power before handling.

## 3.3- AIRFLOW VERIFICATION

Verify the airflow by taking readings of the following points, while the elements are in heating mode:

- a. Total amperage of all the heating elements;
- b. Voltage at the furnace;
- c. Supply air temperature. The point of the reading must not be affected by radiant heat from the elements;
- d. Return air temperature.

From these readings, one can arrive at an approximate calculation of the average airflow. To do that, the following formula should be used:

$$\text{Liter/s} = \frac{0.82 \times \text{amps.} \times \text{volts}}{\text{Diff. temperature } ^\circ\text{C}}$$

$$\text{CFM} = \frac{3.1 \times \text{amps.} \times \text{volts}}{\text{Diff. temperature } ^\circ\text{F}}$$

### 3.3.1- Supply Air Temperature Rise Test

1. Operate the unit at maximum power for at least 10 minutes;
2. Measure the air temperature in the return air plenum;
3. Measure the air temperature in the largest trunk coming off the supply air plenum, just outside the range of radiant heat from the heat exchanger. 0.3 m (12") from the plenum of the main take-off is usually sufficient;
4. Calculate the temperature rise by subtracting the return air temperature from the supply air temperature.

If the temperature rise exceeds the temperature specified ( $\pm 5^\circ\text{F}/2.8^\circ\text{C}$ ) in Table 2, adjust the fan speed. If the excessive temperature rise cannot be reduced by increasing fan speed, investigate for ductwork obstructions or dirty and improper air filter.



## CAUTION

It is important to check the airflow and to ascertain that the unit does not operate above the temperatures specified in the Technical Specifications (Table 2). This is particularly important if a cooling coil or a heat pump has been installed in the ducts.

Hi-Limit thermal protectors should never need to engage during the normal functioning of the appliance. They are strictly designed to engage during the improper functioning of the blower or when the filter was improperly maintained.

### 3.3.2- High limit verification

After operating the furnace for at least 15 minutes, restrict the return air supply by blocking the filters or the return air register and allow the furnace to shut off on High Limit. The electric heaters must deactivate themselves before the warm air temperature exceeds  $200^\circ\text{F}$  ( $93^\circ\text{C}$ ). Remove the obstruction and the elements should restart after a few minutes.

## 4- MAINTENANCE



### WARNING

**Electrical shock hazard.**

**Turn OFF power to the furnace before any disassembly or servicing.**

**Failure to do so can result in death, bodily injury and/or property damage.**

Preventive maintenance is the best way to avoid unnecessary expense and inconvenience. Have your heating system inspected by a qualified service technician at regular intervals. Do not attempt to repair the furnace or its controls. Call a qualified service technician.

Before calling for repair service, check the following points:

1. Check fuses or the circuit breakers;
2. Check if the 15 A circuit breaker on the furnace is disengaged;

3. Set the thermostat higher than room temperature. If the unit does not start up, cut the power and call a qualified service technician.

When calling for service or ordering a replacement part, specify the model and serial number of your appliance.

#### 4.1- AIR FILTER

The filter supplied with the unit should be replaced twice a year. The presence of animal hair, dust, etc. may necessitate more frequent changes. Dirty filters have an adverse effect on the performance of the central heating system.

#### 4.2- MOTOR LUBRICATION

Do not lubricate the blower motor, since it is permanently lubricated.



## 5-FURNACE INFORMATION

Model: \_\_\_\_\_ Serial number: \_\_\_\_\_

Furnace installation date: \_\_\_\_\_

Service telephone # - Day: \_\_\_\_\_ Night: \_\_\_\_\_

Dealer name and address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### **START-UP RESULTS**

Voltage: \_\_\_\_\_

Total current consumed by the elements: \_\_\_\_\_

Supply air temperature: \_\_\_\_\_

Return air temperature: \_\_\_\_\_

Supply air duct static pressure: \_\_\_\_\_

Return air duct static pressure: \_\_\_\_\_

Total pressure: \_\_\_\_\_

Calculated air flow: \_\_\_\_\_

Current consumed by the blower motor: \_\_\_\_\_

Current consumed by the accessories: \_\_\_\_\_

**Table 1: Technical specifications**

RATINGS AND PERFORMANCE	SUPxx-A240V12 1/2 HP / 240V Motor						SUPxx-A240V20 1 HP / 240V Motor				
	10	15	18	20	23	25	20	23	25	27	30
Capacity											
Power, total @ 240V / 208V (Kw)	10 / 7.5	15 / 11.3	18 / 13.5	20 / 15	23 / 17.3	25 / 18.8	20 / 15	23 / 17.3	25 / 18.8	27 / 20.3	30 / 22.5
Power, first stage @ 240V / 208V (Kw)	5 / 3.8	10 / 7.5	9 / 6.8	10 / 7.5	13 / 9.8	15 / 11.3	10 / 7.5	13 / 9.8	15 / 11.3	15 / 11.3	15 / 11.3
Net capacity@ 240V (BTU/h) @ 208V	34,120 25,628	51,180 38,442	61,420 46,130	68,240 51,256	78,480 58,944	85,300 64,070	68,240 51,256	78,480 58,944	85,300 64,070	92,124 69,195	102,360 76,884
Temperature rise range @ 240V (°F) <sup>1</sup>	68	54	65	53	60	57	65	58	58	59	65
<b>ELECTRICAL SYSTEM</b>											
Volts - Hertz - Phase	2 wires 240/208 - 60 - 1										
Electrical element #1 @ 240V / 208V (Kw)	5 / 3.7	5 / 3.7	4 / 3.1	5 / 3.7	4 / 3.1	5 / 3.7	5 / 3.7	4 / 3.1	5 / 3.7	5 / 3.7	5 / 3.7
Electrical element #2 @ 240V / 208V (Kw)	5 / 3.7	5 / 3.7	5 / 3.7	5 / 3.7	5 / 3.7	5 / 3.7	5 / 3.7	5 / 3.7	5 / 3.7	5 / 3.7	5 / 3.7
Electrical element #3 @ 240V / 208V (Kw)		5 / 3.7	4 / 3.1	5 / 3.7	4 / 3.1	5 / 3.7	5 / 3.7	4 / 3.1	5 / 3.7	5 / 3.7	5 / 3.7
Electrical element #4 @ 240V / 208V (Kw)			5 / 3.7	5 / 3.7	5 / 3.7	5 / 3.7	5 / 3.7	5 / 3.7	5 / 3.7	4 / 3.1	5 / 3.7
Electrical element #5 @ 240V / 208V (Kw)					5 / 3.7	5 / 3.7		5 / 3.7	5 / 3.7	4 / 3.1	5 / 3.7
Electrical element #6 @ 240V / 208V (Kw)										4 / 3.1	5 / 3.7
Blower motor Consumption @ 240V / 208V (Amp. Max.)	2.3 / 2.7	2.3 / 2.7	2.3 / 2.7	2.3 / 2.7	2.3 / 2.7	2.3 / 2.7	5.2 / 6.0	5.2 / 6.0	5.2 / 6.0	5.2 / 6.0	5.2 / 6.0
Heating Elements Consumption @ 240V / 208V (Amp)	41.4 / 35.9	62.1 / 53.8	75.8 / 65.7	82.8 / 71.8	96.5 / 83.6	103.5 / 89.7	82.8 / 71.8	96.5 / 83.6	103.5 / 89.7	113.6 / 98.5	124.3 / 107.7
Total Consumption @ 240V / 208V (Amp)	43.7 / 38.6	64.4 / 56.5	78.1 / 68.4	85.1 / 74.5	98.8 / 86.3	105.8 / 92.4	88.0 / 77.8	101.7 / 89.6	108.7 / 95.7	118.8 / 104.5	129.5 / 113.7
Ampacity - Terminal block #1 @ 240V / 208V <sup>2</sup>	54.0 / 47.8	78.6 / 69.2	94.7 / 83.2	103.2 / 90.5	119.3 / 104.5	127.7 / 111.8	106.5 / 94.3	122.7 / 108.3	131.1 / 115.6	53.1 / 48.0	57.3 / 51.7
Ampacity - Terminal block #2 @ 240V / 208V <sup>2</sup>	-	-	-	-	-	-	-	-	-	90.0 / 78.0	98.4 / 85.2
Breaker size - Terminal block #1 @ 240V / 208V <sup>2</sup>	60 / 50	80 / 70	100 / 90	125 / 90	125 / 125	150 / 125	125 / 100	125 / 125	150 / 125	60 / 50	60 / 60
Breaker size - Terminal block #2 @ 240V / 208V <sup>2</sup>	-	-	-	-	-	-	-	-	-	90 / 80	100 / 90
<b>BLOWER DATA</b>											
Motor (HP) / number of speeds	1/2 HP ECM EON						1 HP ECM EON				
Nominal blower size (diam. X width)	12 x 8						12 x 9				
<b>GENERAL INFORMATION</b>											
Overall dim. (width x depth x height)	22" x 22" x 36.5"										
Supply	20" x 20"										
Return	18" x 18"										
Filter quantity and size	(1) 20" x 20"										
Shipping weight	48 Kg / 105 lbs										
Maximum cooling capacity	3 tons						5 tons				

1) Can be adjusted by +10% or -10% using "CFM adjust" option on the control board.

2) Calculated on the basis of standard C22.2-236.

**Figure 6 : Furnace dimensions**

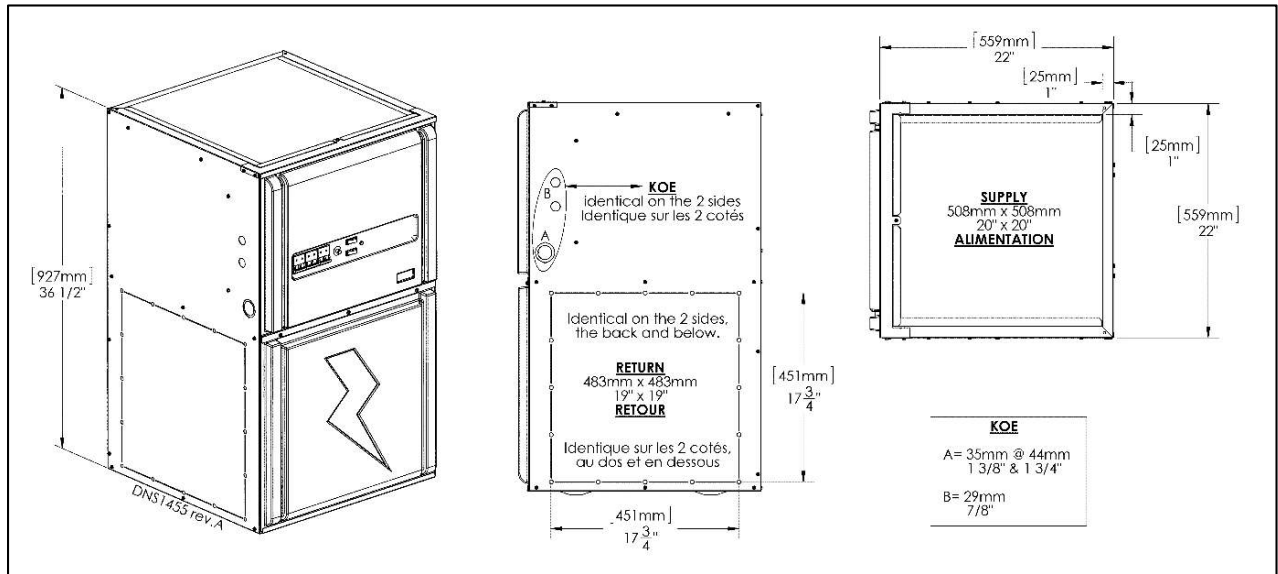
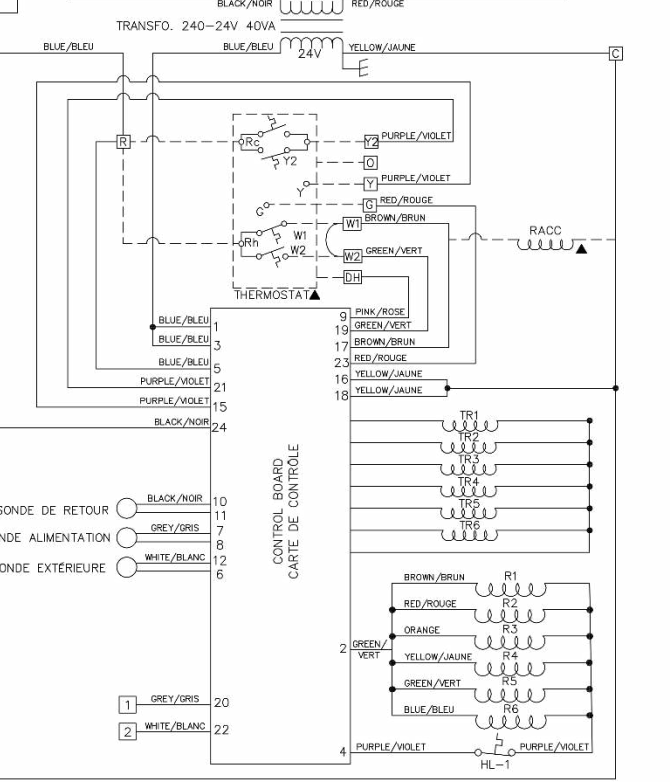
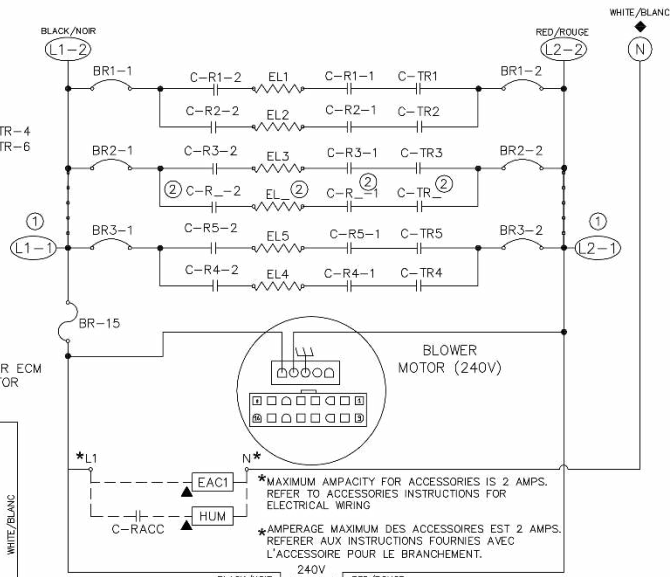
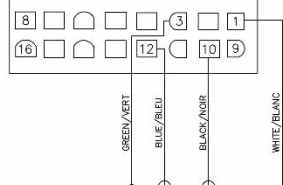


Figure 7 : Electrical diagram Modulating ECM SUPREME

**ELECTRICAL DIAGRAM / DIAGRAMME ÉLECTRIQUE  
MODULATING/MODULANTE ECM**

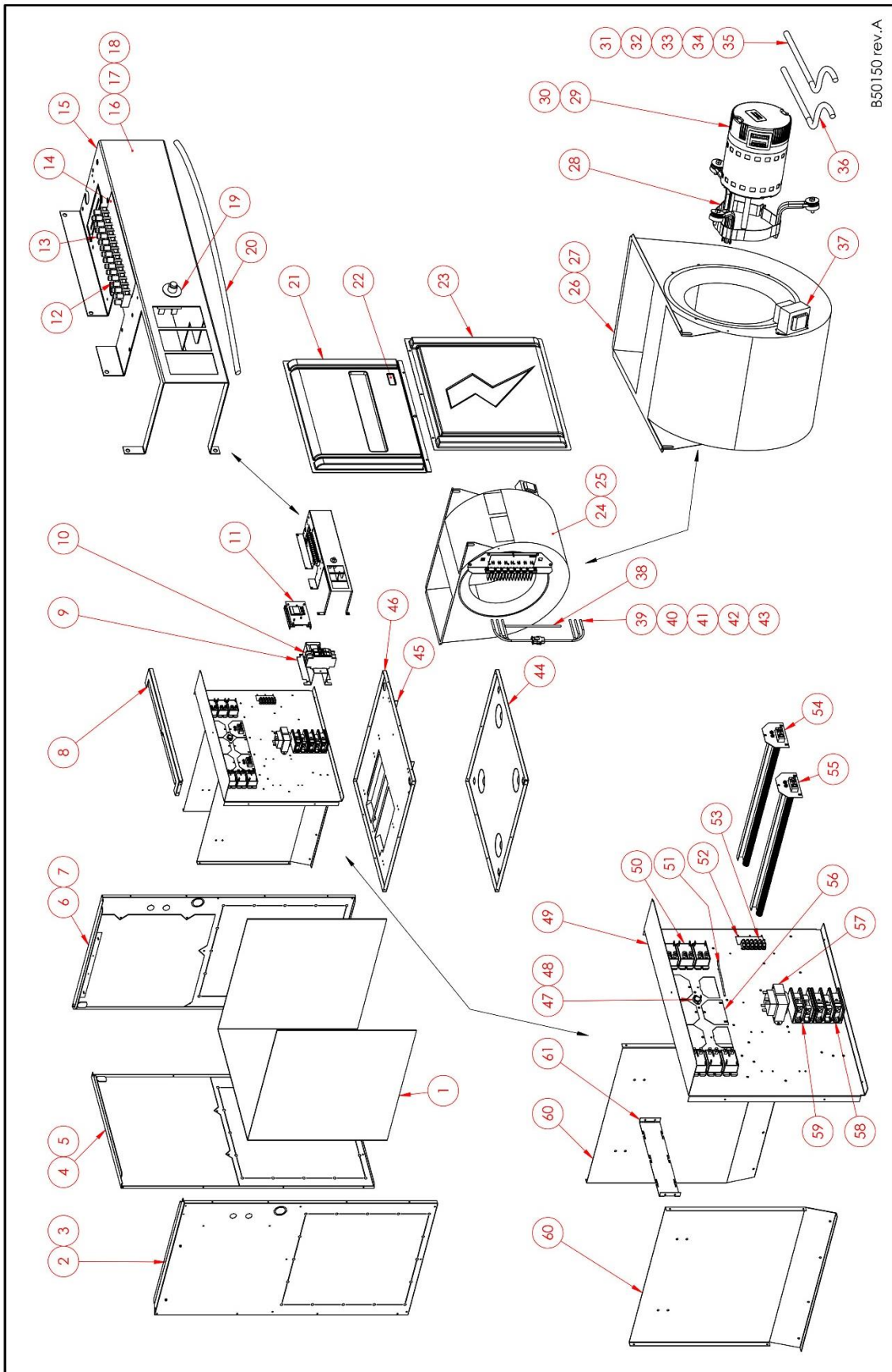
- ① LORSQUE DEUX BORNIERES SONT UTILISEES  
WHEN TWO TERMINAL BLOCKS ARE USED
- ② 18kw @ 25kw: C-R4 EL4 C-TR-4  
27kw/30kw: C-R6 EL6 C-TR-6

CONNECTEUR DE CONTROLE 16 PIN MOTEUR ECM  
MOTOR ECM 16 PIN CONTROL CONNECTOR



- FACTORY WIRING / CABLAGE EN USINE
  - - - FIELD SUPPLY WIRING / CABLAGE SUR PLACE
  - ▲ FIELD SUPPLY COMPONENTS / COMPOSANTES FOURNIES SUR PLACE
  - ◆ USE NEUTRAL N ONLY IF BLOWER MOTOR IS 120V AND/OR ACCESSORIES (TERMINALS N & L1) IS REQUIRED / UTILISER LE NEUTRE N SEULEMENT SI MOTEUR 120V ET/OU L'ALIMENTATION ÉLECTRIQUE POUR ACCESSOIRES (BORNES N & L1) EST REQUISE
- HL : HIGH LIMIT/HAUTE LIMITE  
 C-R : RELAY CONTACT / CONTACT DU RELAIS  
 EL : ELECTRIC ELEMENT / ÉLÉMENT ÉLECTRIQUE  
 TR : TRIAC  
 MC : MODULATING CONTACT / CONTACT MODULANT  
 RACC : ACCESSORIES RELAY COIL / BOBINE DE RELAIS D'ACCESSOIRES (FIELD SUPPLIED/FOURNIE SUR PLACE)  
 C-RACC : ACCESSORIES RELAY CONTACT / CONTACT DU RELAIS D'ACCESSOIRES (FIELD SUPPLIED/FOURNI SUR PLACE)  
 HUM : HUMIDIFIER / HUMIDIFICATEUR  
 BR-15 : 15 AMPS BREAKER / DISJONCTEUR 15 AMPS  
 HUM : HUMIDIFIER / HUMIDIFICATEUR  
 EAC1/2 : ELECTRONIC AIR CLEANER / FILTRE À AIR ÉLECTRONIQUE  
 - EAC1 : WITH FLOW SWITCH / AVEC INTERRUPTEUR DE DEBIT  
 - EAC2 : WITHOUT FLOW SWITCH / SANS INTERRUPTEUR DE DEBIT

Figure 8: Exploded vue Modulating SUPREME



**Table 2: Parts List: Modulating SUPREME**

#	Item	Description	Comments
1	B04342	Acoustic insulated	
2	B04343-04	Side panel assembly	Left panel and item 3 included
3	B04340-02	Side panel insulated	
4	B04344-02	Back panel assembly	
5	B04341	Top back insulated	
6	B04343-02	Side panel assembly	Right panel and 7 included
7	B04340-01	Side panel insulated	
8	B04302-01	Top front panel	
9	B04312	Breaker bracket	
10	L01J006	Breaker 60A	
11	B04417	Electronic card assembly	
12	B04000-01	Modify 12 positions terminal	
13	L05F013	Terminal 12 positions	
14	X02331	Label terminal Supreme M	
15	B04421	Support component	
16	X50063	Cosmetic "Supreme M" 3 breaker	Supreme 23/25/27/30kw
17	X50062	Cosmetic "Supreme M" 2 breaker	Supreme 15/18/20kw
18	X50061	Cosmetic "Supreme M" 1 breaker	Supreme 10kw
19	L01J001	Breaker 15amp	
20	B04403	Electrical kit breaker/transfo.	
21	B04275	Top door	
22	X50042	Label logo Dettson	
23	B04349	Low door assembly	
24	B04374-01	Blower assembly	Supreme 10 @ 25kw 1/2hp -ECM
25	B04374-02	Blower assembly	Supreme 20 @ 30kw 1hp -ECM
26	Z011036	Blower 112-9R	Supreme 20 @ 30kw 1hp -ECM
27	Z011035	Blower 112-8R	Supreme 10 @ 25kw 1/2hp -ECM
28	B01889	Motor support band and legs	Supreme 20 @ 30kw 1hp -ECM
29	B03811-27	Motor ass'y ECM 1/2 hp (prog)	Supreme 10 @ 25kw 1/2hp -ECM
30	B03813-18	Motor ass'y ECM 1 hp (prog)	Supreme 20 @ 30kw 1hp -ECM
31	B04415	Electronic blower kit	Supreme 10
32	B04414	Electronic blower kit	Supreme 15
33	B04413	Electronic blower kit	Supreme 18 @ 20kw
34	B04412	Electronic blower kit	Supreme 23 @ 25kw
35	B04404	Electronic blower kit	Supreme 27 @ 30kw
36	B04285	Electrical blower kit	
37	B03141-02	Inductor	
38	A00444	Electronic triac Kit	
39	B04402	Electrical kit triac	Supreme 27 @ 30kw
40	B04408	Electrical kit triac	Supreme 23 @ 25kw
41	B04409	Electrical kit triac	Supreme 18 @ 20kw
42	B04410	Electrical kit triac	Supreme 15
43	B04411	Electrical kit triac	Supreme 10
44	B04303	Floor	
45	B04309	Fan slide	
46	B04420	Fan separator	
47	R02N028	Thermo 125+/-5.5C	
48	B04308	Hi-limit deflector	
49	B04305	Front separator	
50	L01H030	Relay DPST 22VDC	
51	B04369-01	Electrical power kit	
52	X02332	Label probe terminal Supreme M	
53	B04000-02	Modify 12 positions terminal	
54	B04351-02	Element assembly	5kw
55	B04351-01	Element assembly	4kw
56	B04315-01	Element plate	
57	L01F010	Transformer 208/240/24	
58	L99F007	Terminal bloc 600V/175A (1423570)	3 positions
59	L99F008	Terminal bloc 600V/175A (1422570)	2 positions
60	B04306	Deflector	
61	B04307	Element support	
Accessories			
	DFB-SUP	Base for downflow	(ref: B03310-03)
	K03066	Cooling Kit interface	