

# Mars Air Systems

## Typical Air Curtain Wiring Diagrams

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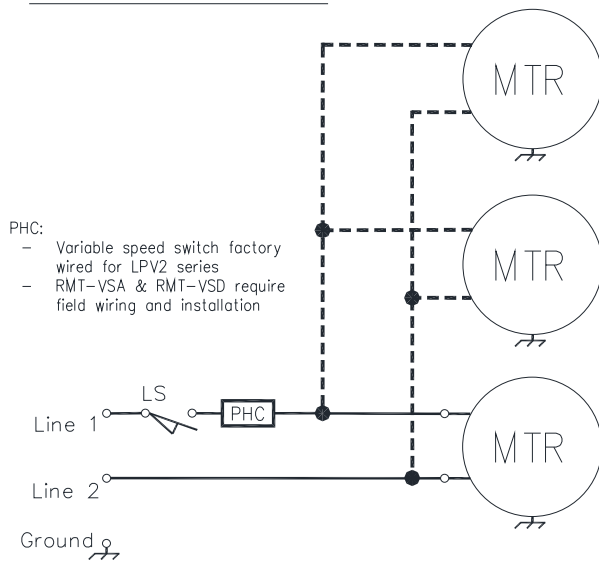
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## Typical Wiring Diagrams

### SINGLE PHASE

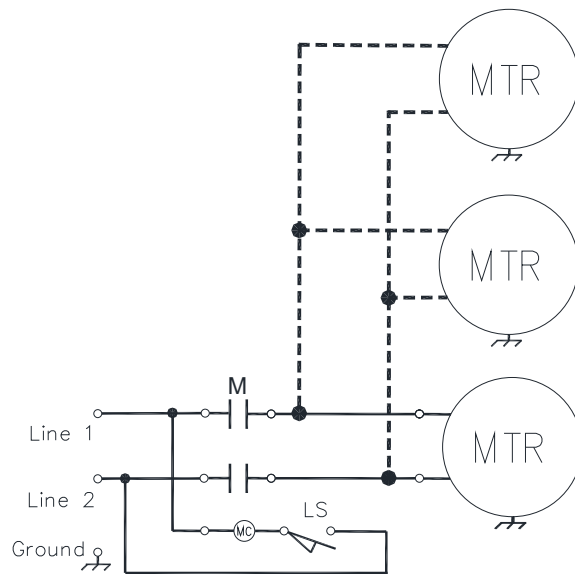
### TYPICAL UNHEATED DIAGRAMS



#### 120/208-240/277v Single Phase Motor

1/6 H.P. Use 15A Micro Switch  
1/2 H.P. Use 15A Micro Switch  
1 H.P. Use 20A Micro Switch

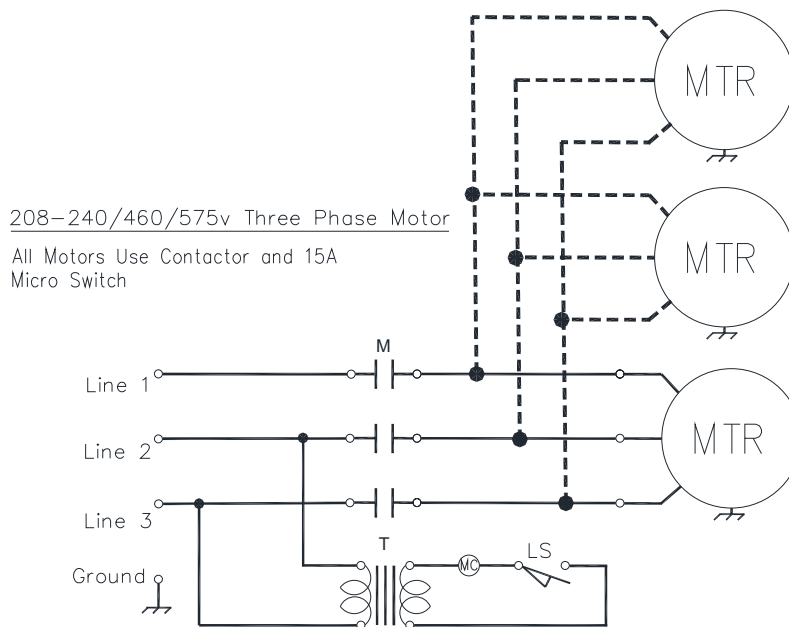
LS: Limit Switch. Wire as Normally Closed (COM & NC)  
Max Rating: Upto 1 HP, 250VAC, 1PH



#### 120/208-240/277v Single Phase Motor

Larger than 1 H.P. Use Contactor and 15A Micro Switch

### THREE PHASE



#### 208-240/460/575v Three Phase Motor

All Motors Use Contactor and 15A Micro Switch

#### Typical Single Phase Motor Terminal Connections:

For 1/2 HP: <1> is Common for 115V

<1> is Hot for 208/230V

<2> is Low Speed

<3> is High Speed

<4> is Ground

<5> is Medium Speed

For 1 HP: <1> is Common for 115V, 208/230V

<2> is High Speed

<3> is Low Speed

<4> is Ground

Notes: This wiring diagram is applicable for Single Phase motors as follows:

LPV2: Up to 3 motors

STD2: Up to 2 motors

HV2: 1 motor

\*See Door Limit Switch submittal for additional switch info

### SYMBOLS

LS - Micro Switch

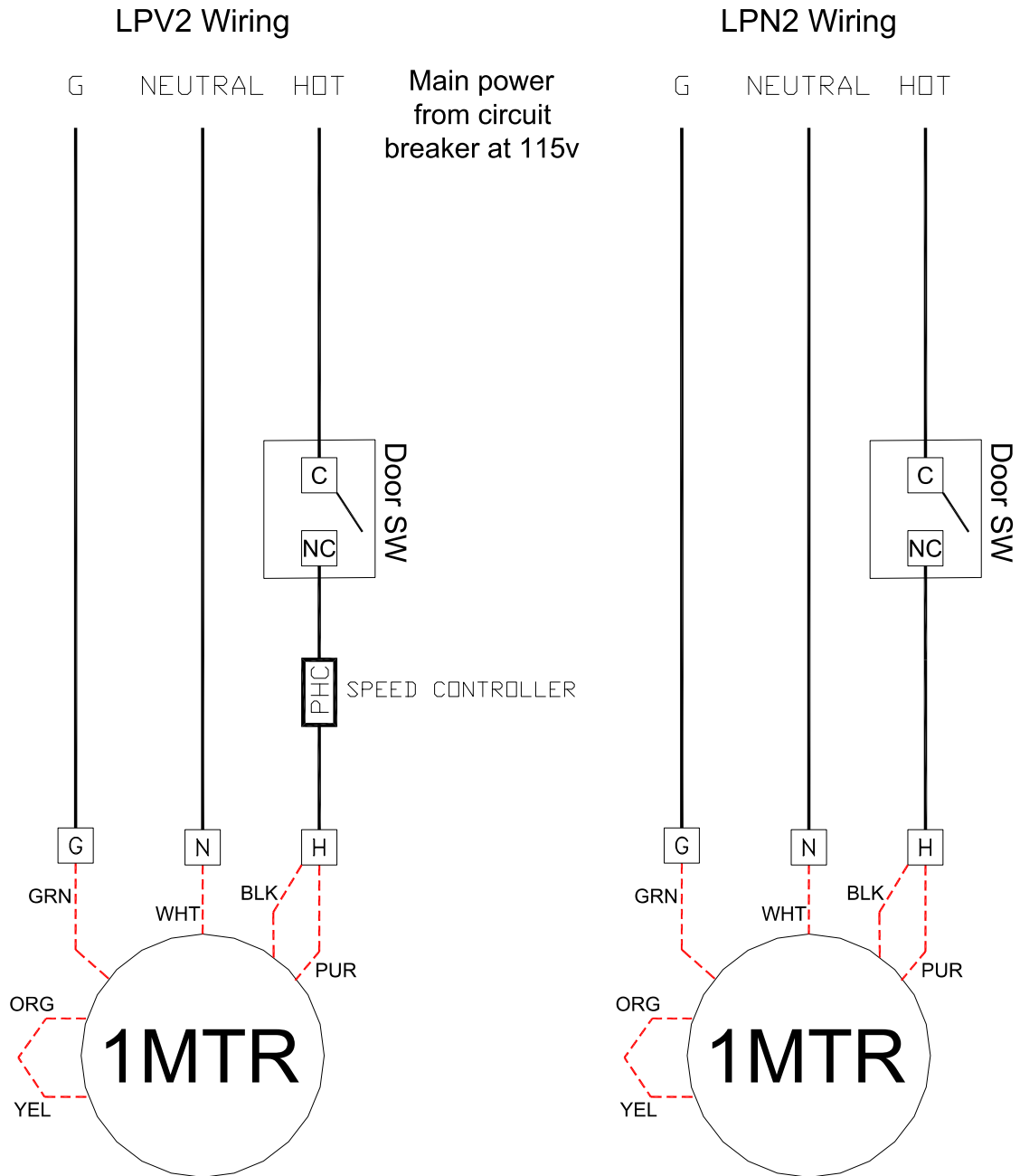
M - Contactor or Motor Starter

MC - Contactor Coil

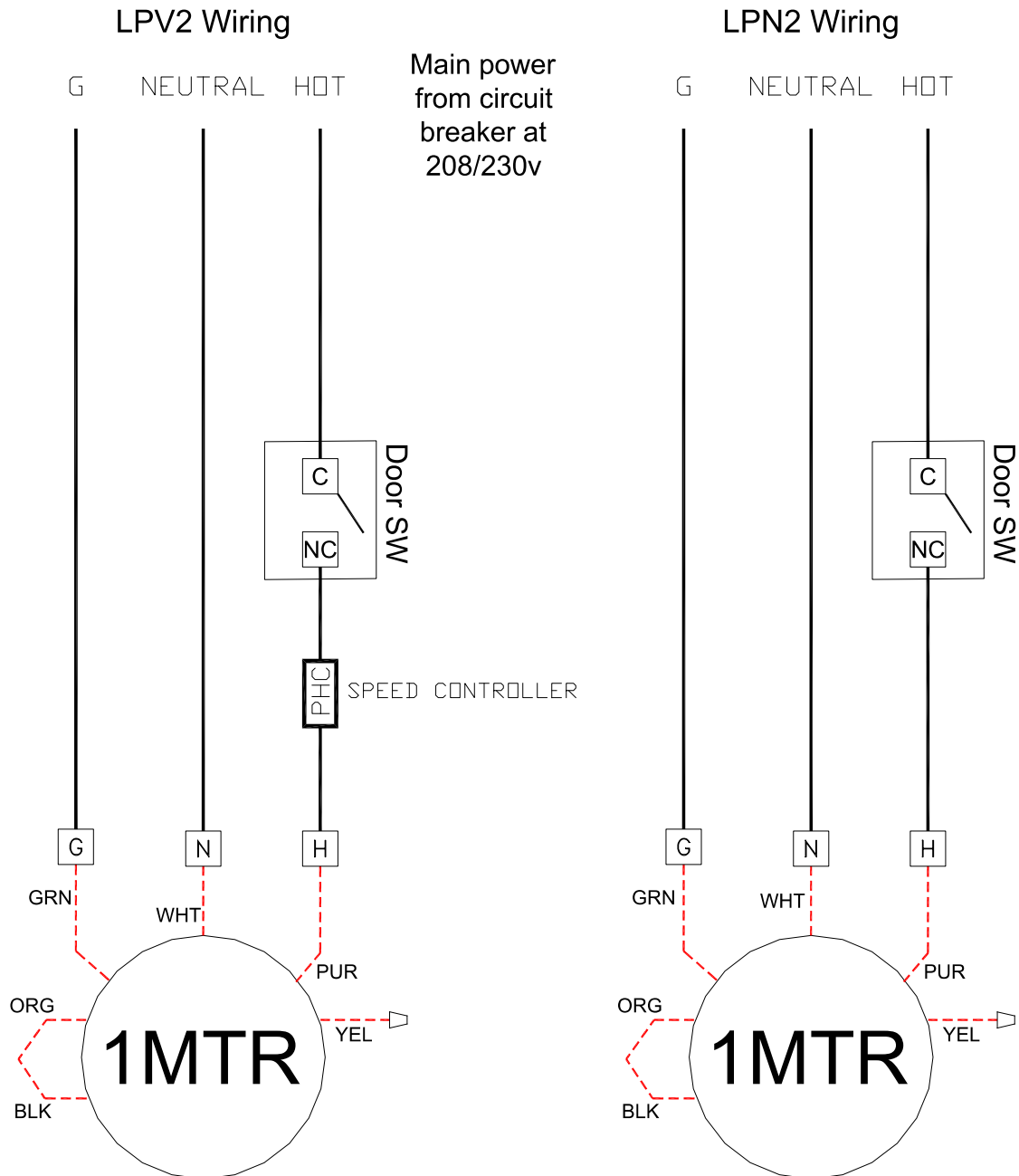
T - Control Transformer

PHC - Speed Controller (LPV series only)

## LPV2/LPN2 115v Motor



## LPV2/LPN2 208/230v Motor



## Door Limit Switches

### How to Properly Wire Mechanical Door Limit Switches

**Note: Please follow the wiring diagram included with the optional door limit switch purchased.**

For the Mechanical types: (99-012, 99-013, 99-014, 99-015, 99-016, 99-267)

#### **DO NOT GROUND the "COM" terminal**

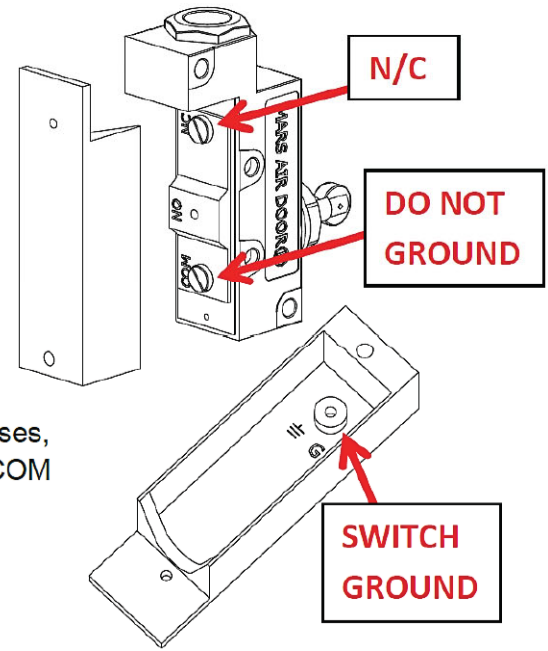
Damage caused by grounding the COM will not be covered under warranty.

There is a marked and/or green ground terminal provided.

COM is defined as the common terminal that supplies power to the N/C (Normally Closed) and N/O (Normally Open) terminals. Grounding the COM terminal will short the breaker and/or burn fuses, transformers and possibly motors. Typically, only 2 terminals, the COM and either the N/C or N/O, are used for standard applications.



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### How to Properly Wire Magnetic Door Limit Switches

**Note: Please follow the wiring diagram included with the optional door limit switch purchased.**

For the Magnetic types: (99-018, 99-118, 99-124, 99-125, 99-275)

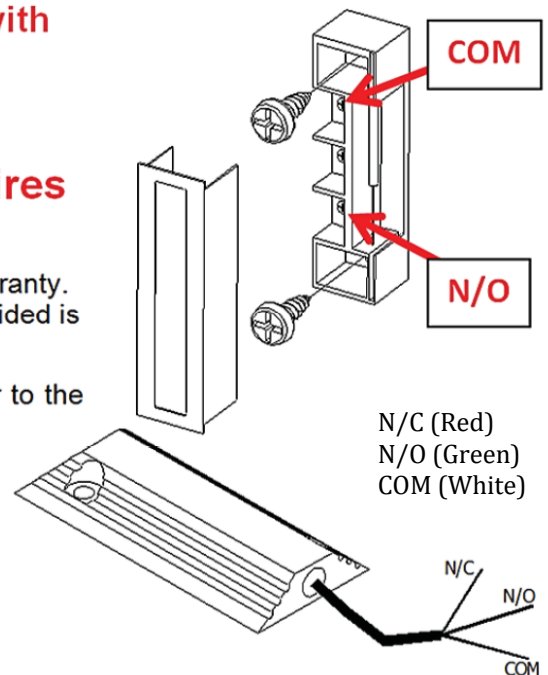
#### **DO NOT GROUND the Green or White wires or COM (24V) terminals**

Damage caused by grounding them will not be covered under warranty. The switch is grounded (except 24V) when the shielded cable provided is connected to a j-box.

COM is defined as the common terminal wire that supplies power to the N/C (Normally Closed) and N/O (Normally Open) terminal wires. Grounding the green or white terminal wires will short the breaker and burn the magnetic switches. Typically, only 2 terminal wires, either the N/C or N/O, are used for standard applications.



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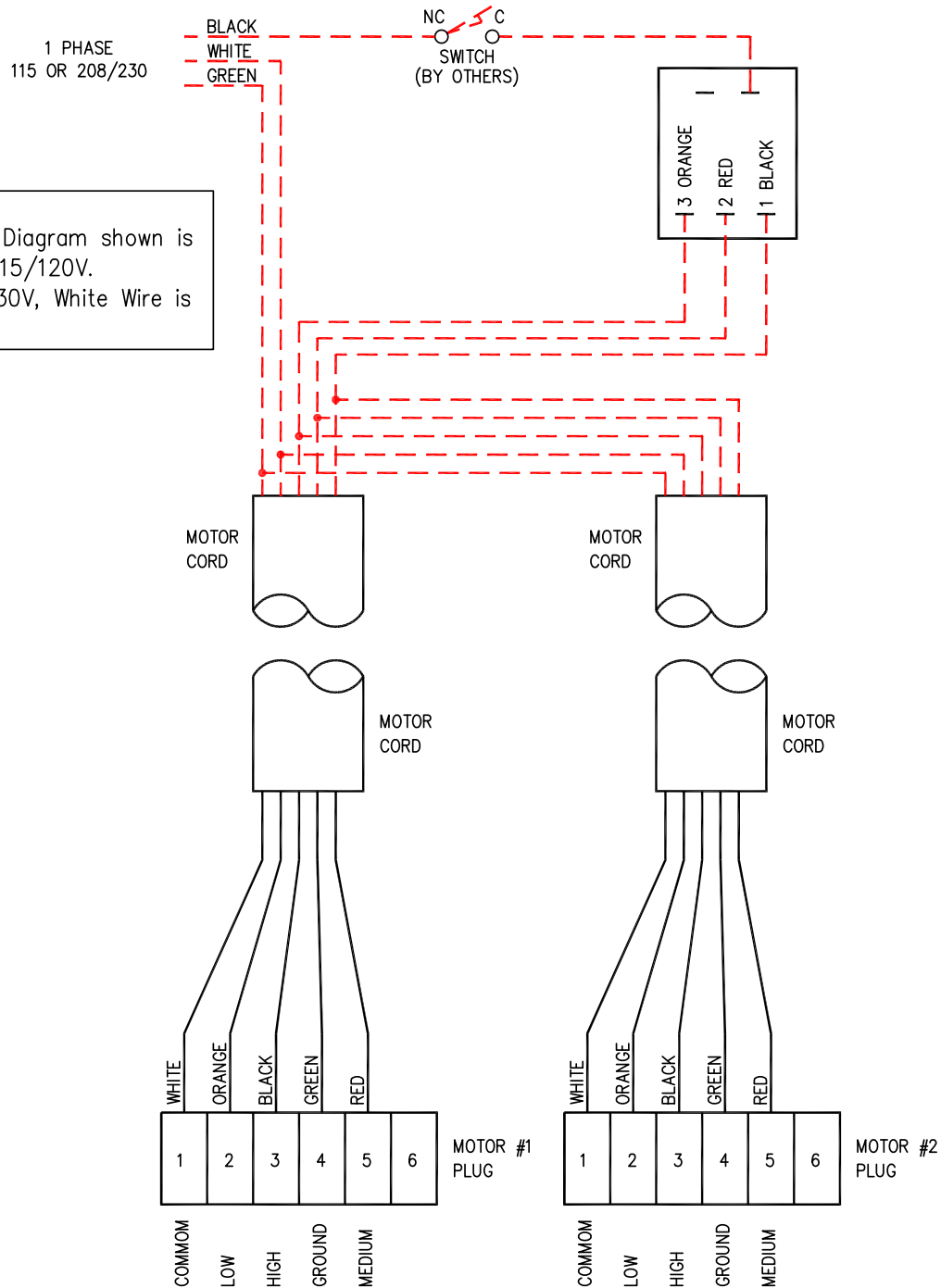


## Three Speed Switch and Cord

Three Speed, (2) Single Phase, 1/2 HP Motor Plug and Switch Connection.  
(FIELD WIRING - - - - -)

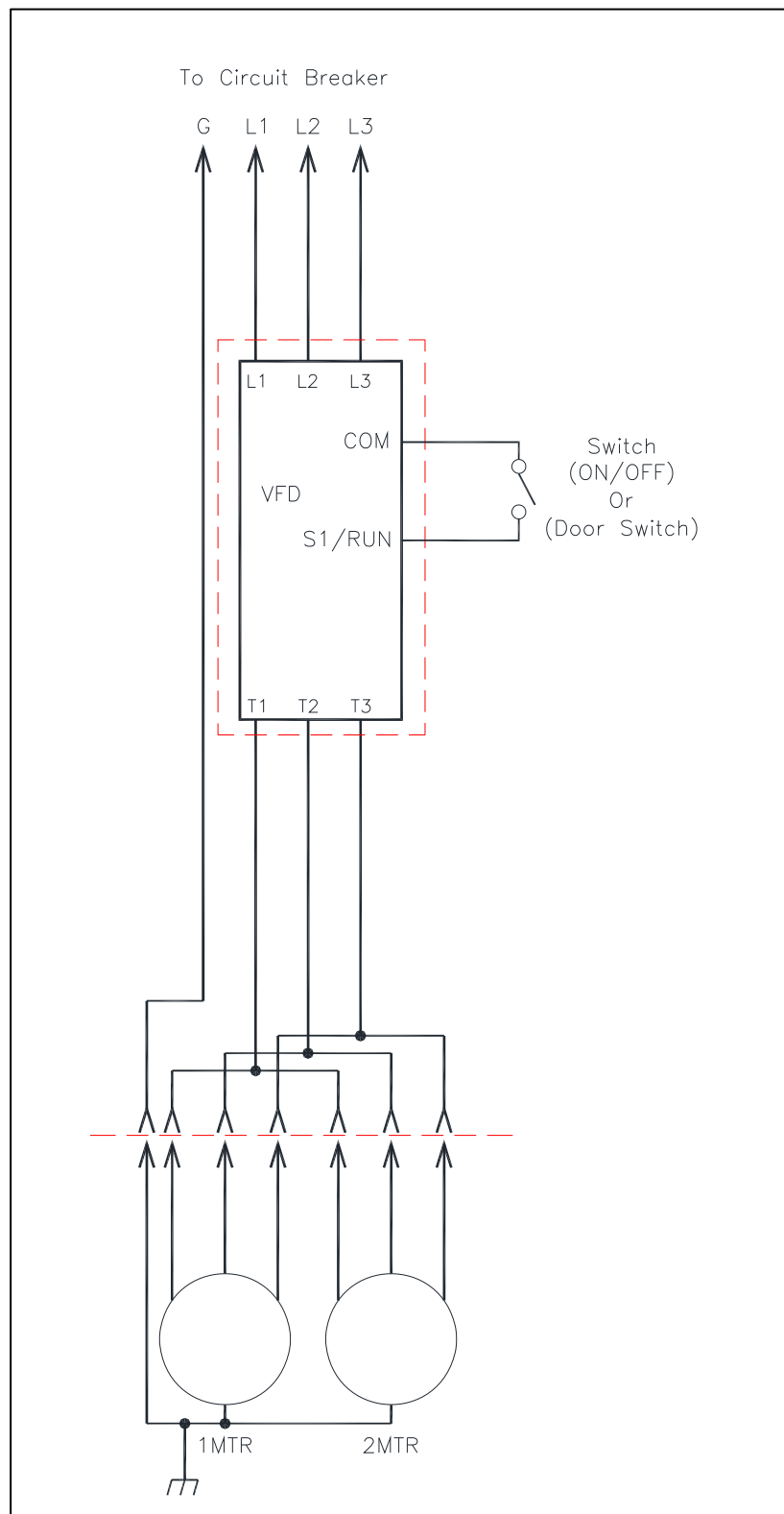
**NOTE:**

The Wiring Diagram shown is wired for 115/120V.  
For 208/230V, White Wire is Hot.



COMBI-WIRE-2MTR 10/17/14 NT

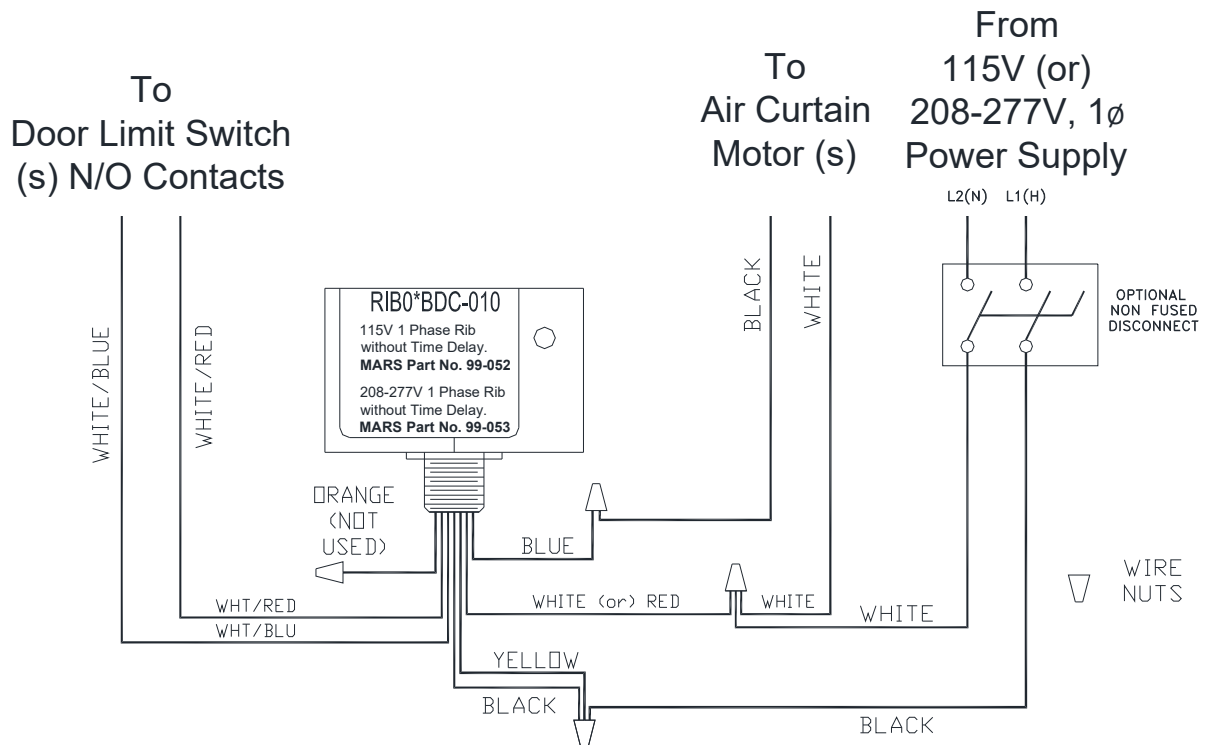
## VFD with Variable Speed Control



## RIB, ½ HP with No Time Delay

### RIB Kit Rating:

- 115v or 208-230v
- 1/2 HP Max



### RIB Kit Part Numbers:

- 115v/1Ø
- J0023, J0036, J0100
- 208-230v/1Ø
- J0024, J0037, J0104

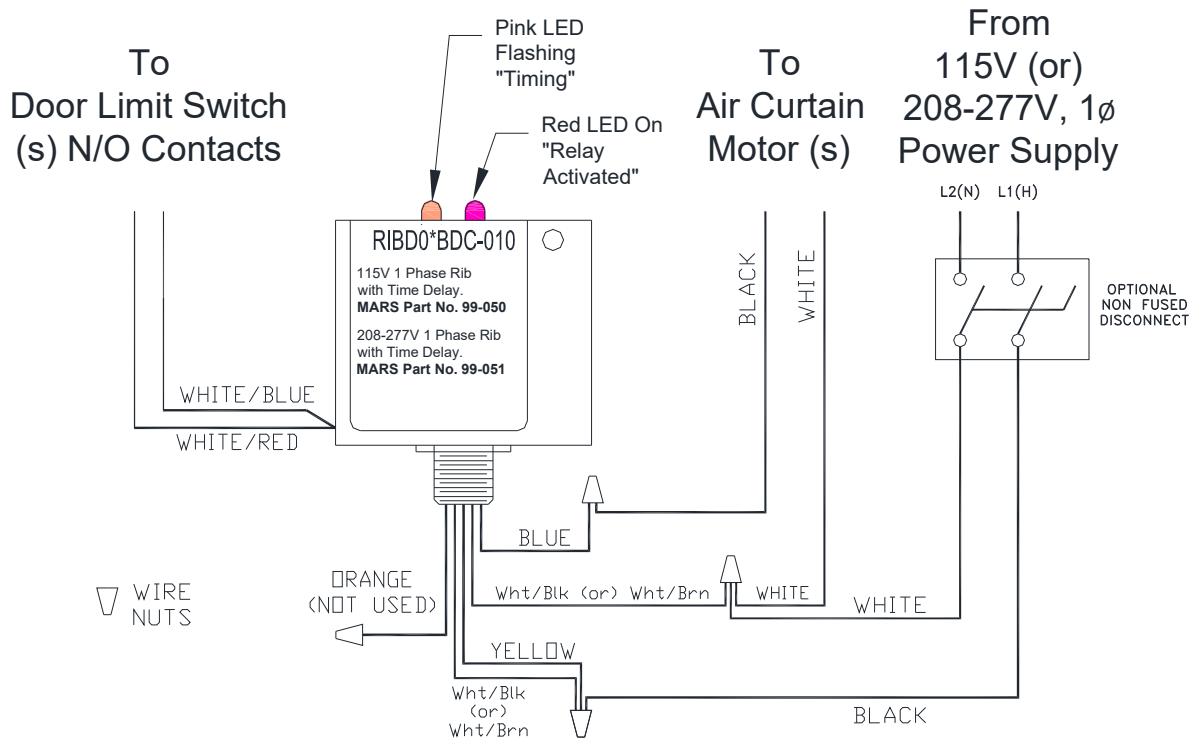
### Note:

The controllers are wired the same, but are not interchangeable.

## RIB, ½ HP with Time Delay

### RIB Kit Rating:

- 115v or 208-230v
- 1/2 HP Max
- Adjustable Time Delay



### RIB Kit Part Numbers:

- 115v/1Ø
- J0021, J0028, J0038, J0102
- 208-230v/1Ø
- J0022, J0029, J0042, J0106

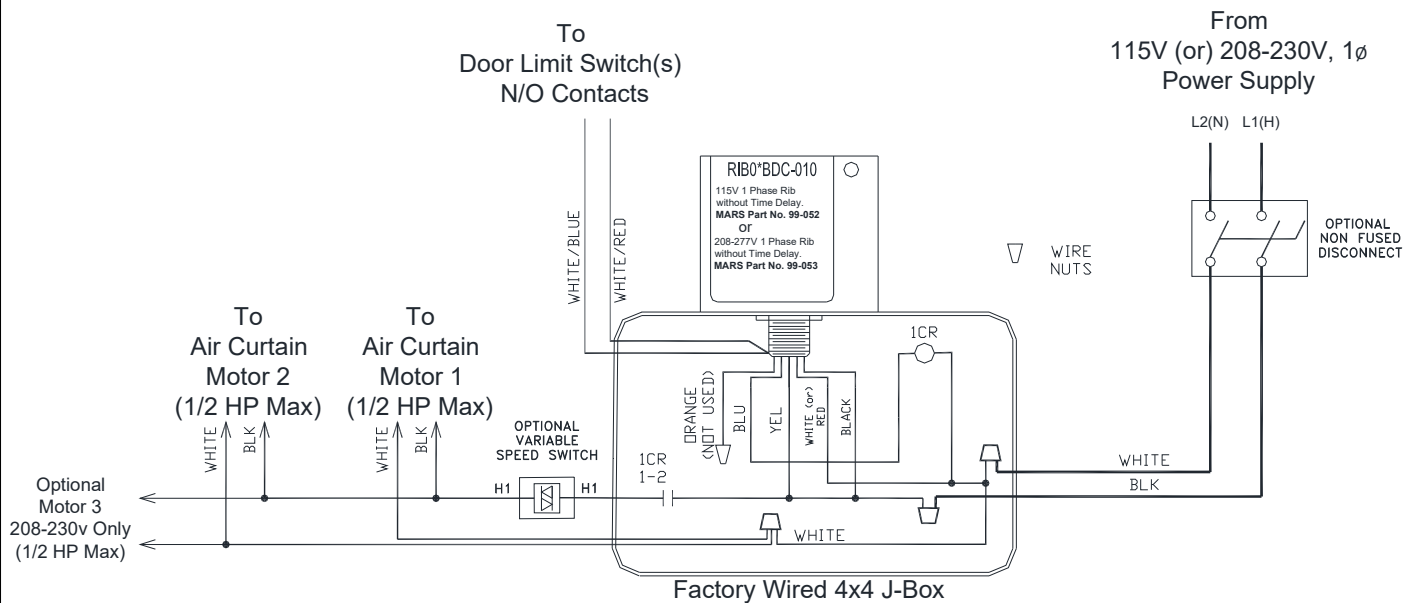
### Note:

The controllers are wired the same, but are not interchangeable.

## RIB, 1 HP with No Time Delay

### RIB Kit Rating:

- 115v or 208-230v
- 1 HP Max (1.5HP for 208-230v)



### RIB Kit Part Numbers:

- ```
- 115v/1ø
-- J0705, J0722, J0726
- 208-230v/1ø
-- J0706, J0723, J0727
```

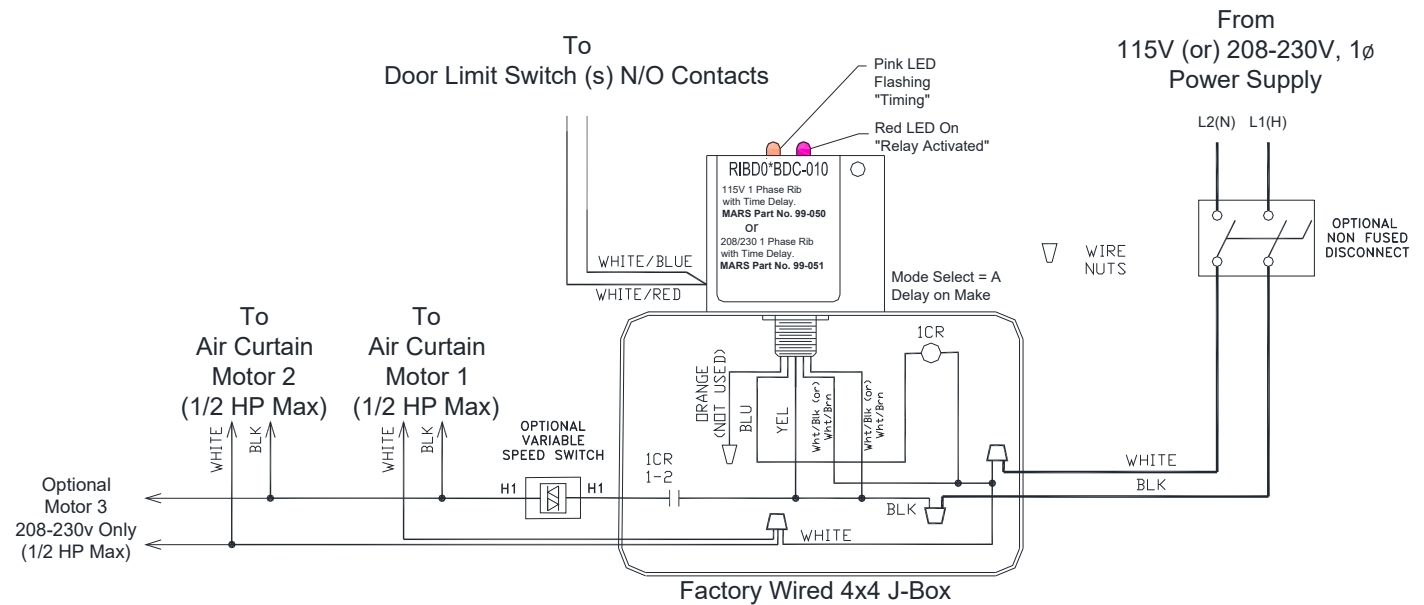
Note:

The controllers are wired the same,  
but are not interchangeable.

## RIB, 1 HP with Time Delay

### RIB Kit Rating:

- 115v or 208-230v
- 1 HP Max (1.5HP for 208-230v)
- Adjustable Time Delay



### RIB Kit Part Numbers:

- 115v/1ø
  - [J0703](#), [J0708](#), [J0720](#), [J0724](#)
- 208-230v/1ø
  - [J0704](#), [J0709](#), [J0721](#), [J0725](#)

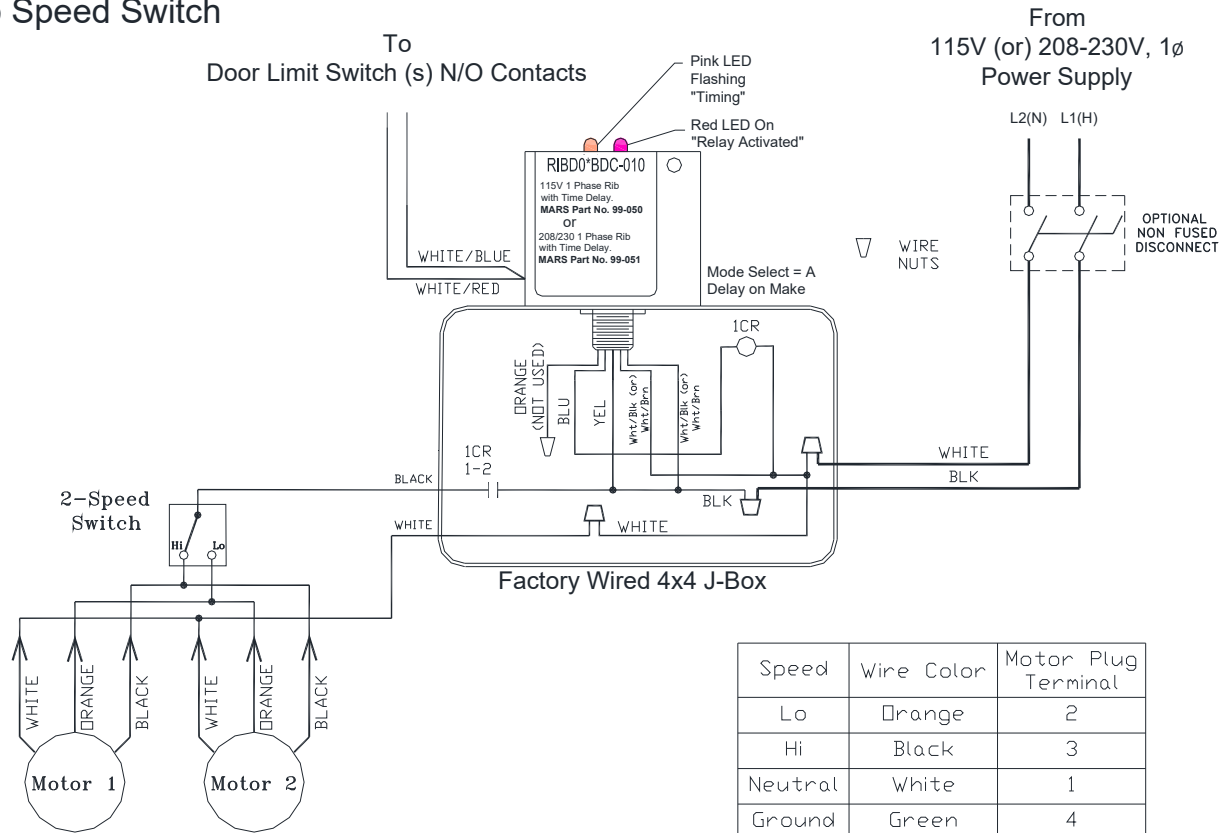
Note:

The controllers are wired the same,  
but are not interchangeable.

## RIB, 1 HP with Time Delay and 2 Speed Switch

### RIB Kit Rating:

- 115v or 208-230v
- 1 HP Max (1.5HP for 208-230v)
- Adjustable Time Delay
- Two Speed Switch



### RIB Kit Part Numbers:

- ```
- 115v/1ø
-- J0703, J0708, J0720, J0724
- 208-230v/1ø
-- J0704, J0709, J0721, J0725
```

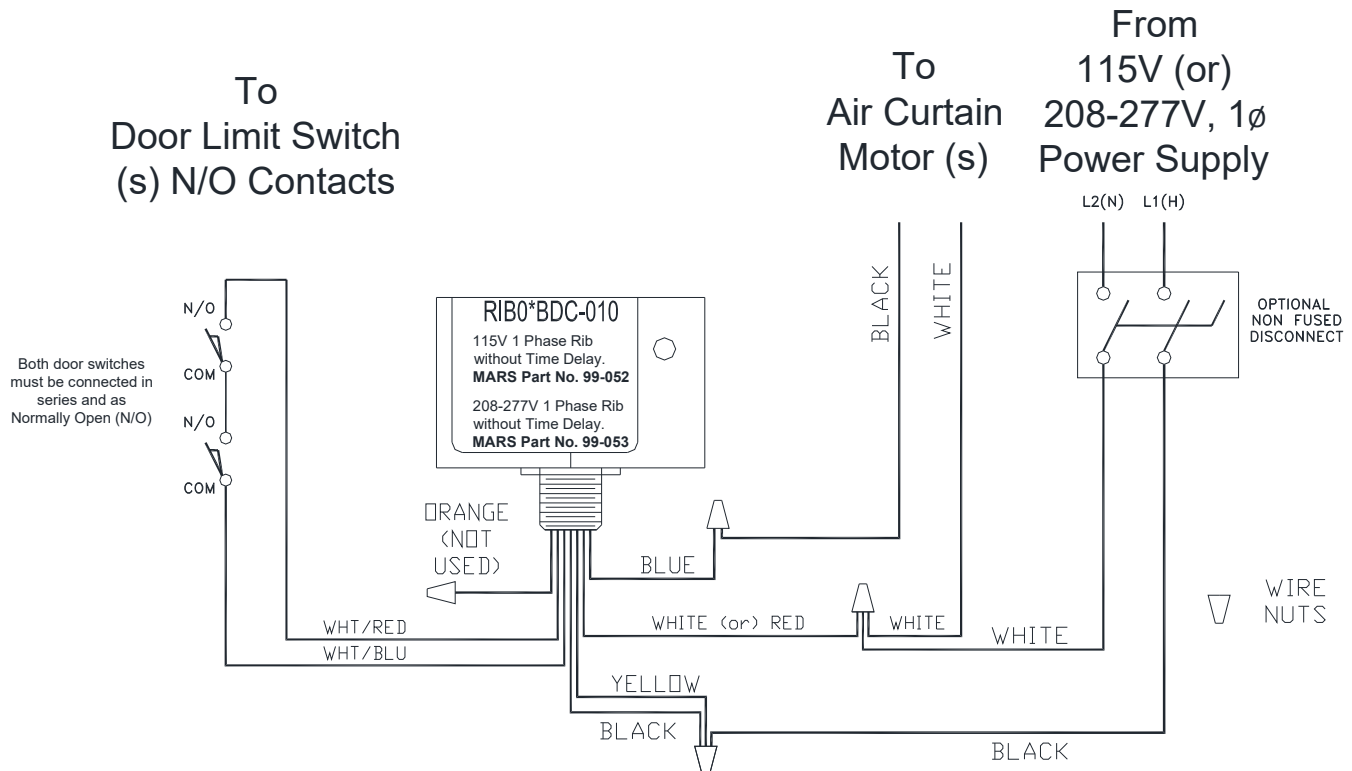
Note:

The controllers are wired the same,  
but are not interchangeable.

## RIB ½ Hp with Two Door Switches

### RIB Kit Rating:

- 115v or 208-230v
- 1/2 HP Max
- Two Door Switches



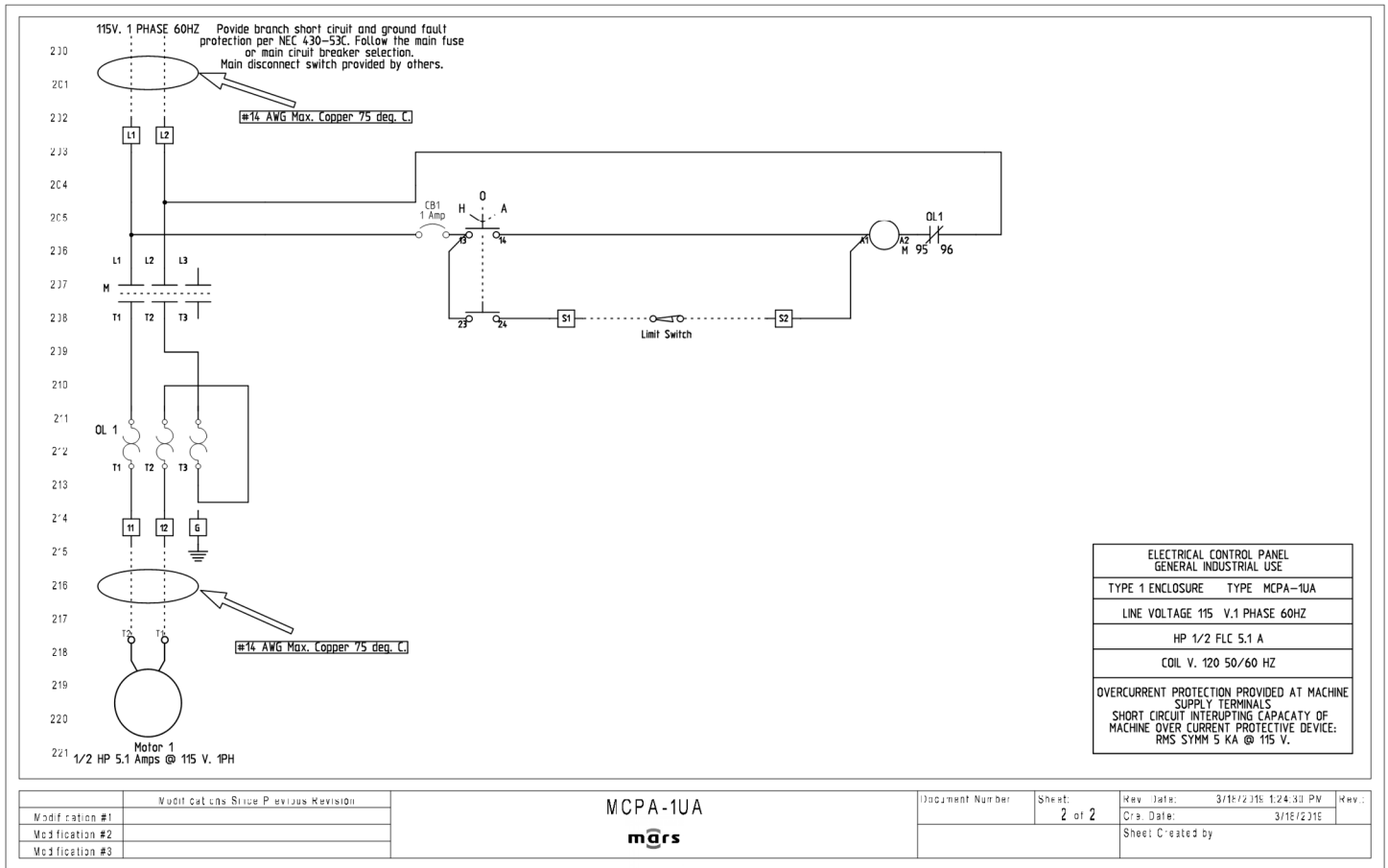
### RIB Kit Part Numbers:

- 115v/1Ø
- J0023, J0036, J0100
- 208-230v/1Ø
- J0024, J0037, J0104

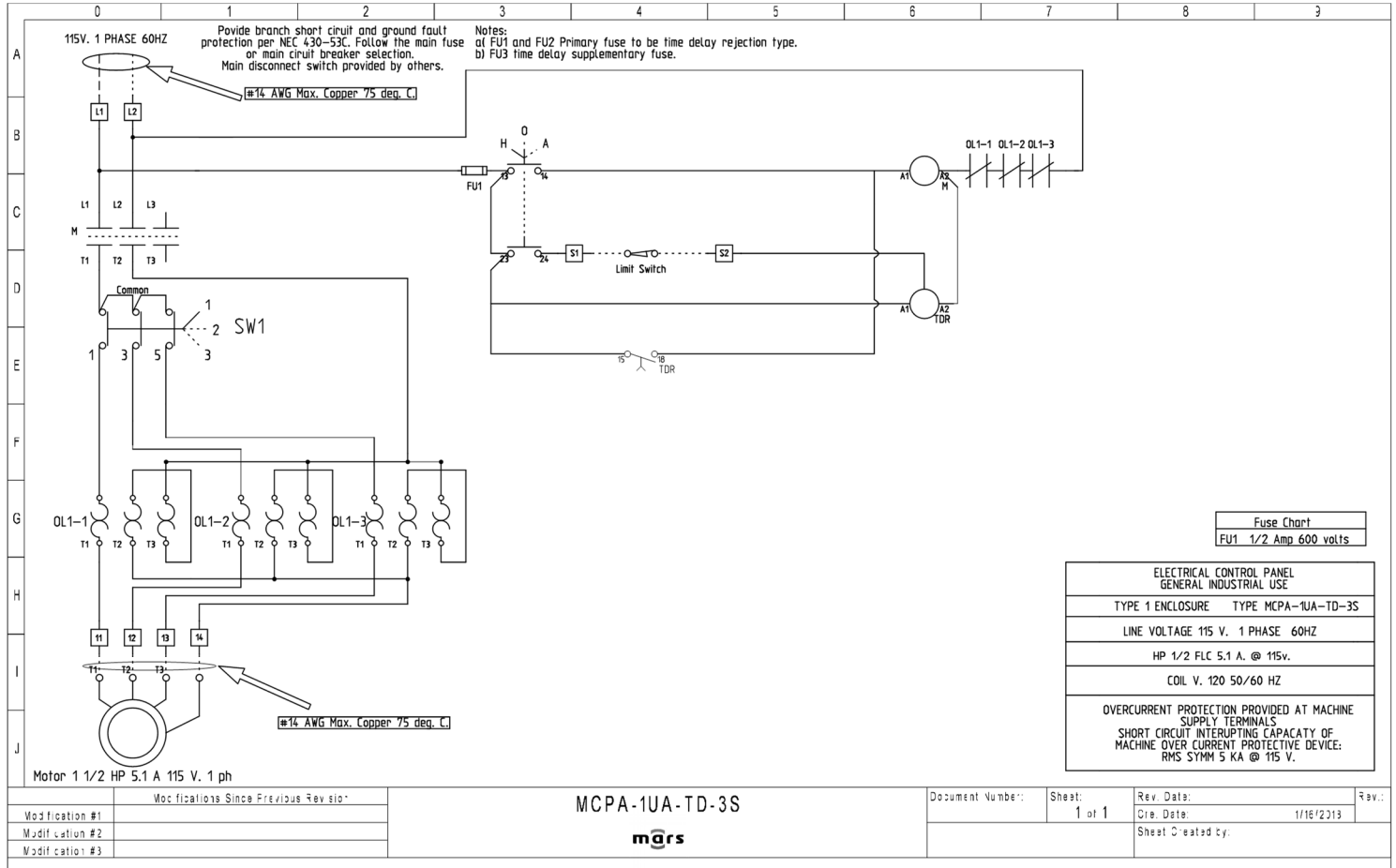
### Note:

The controllers are wired the same, but are not interchangeable.

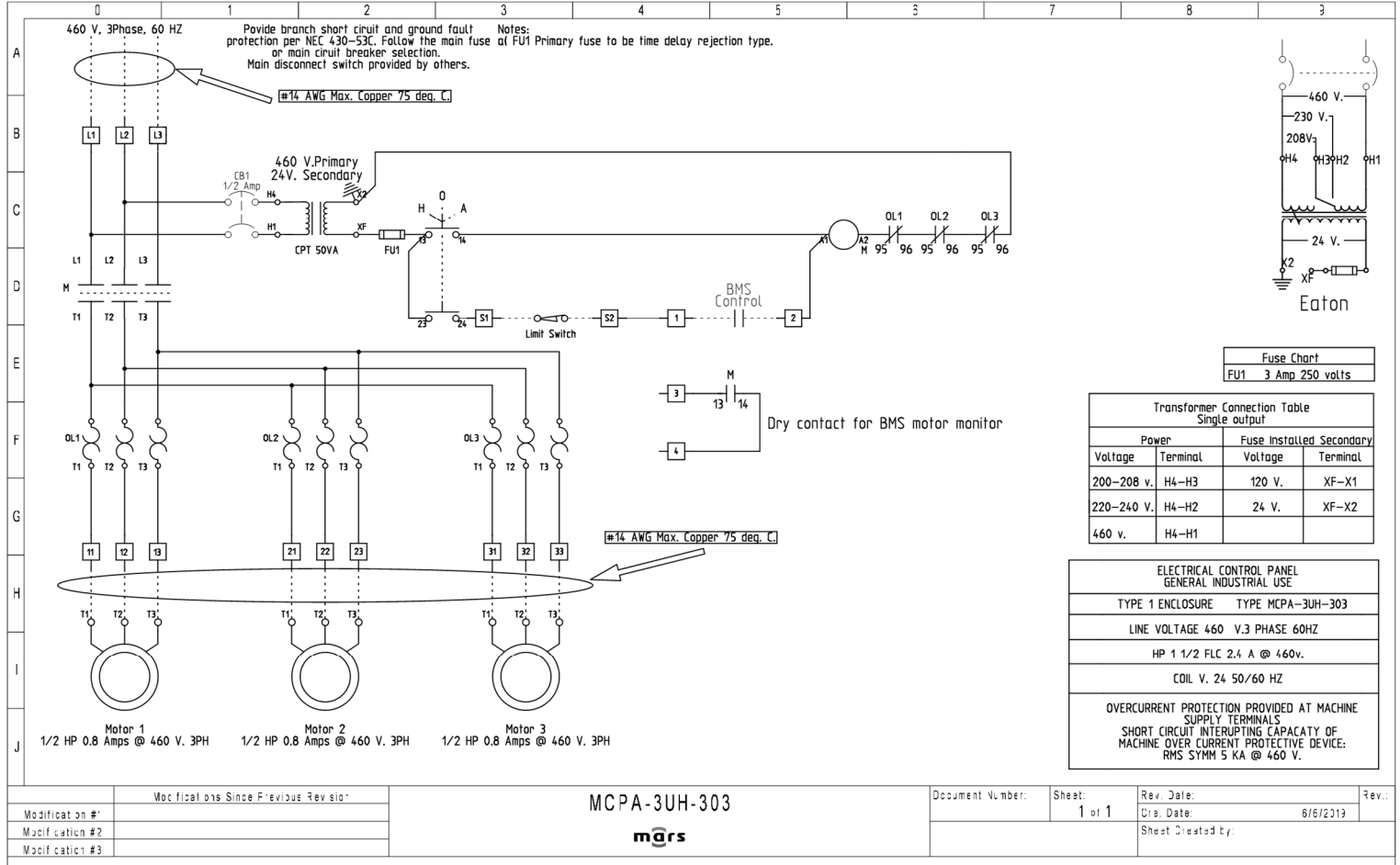
## Typical Motor Control Panel (MCPA-1UA)



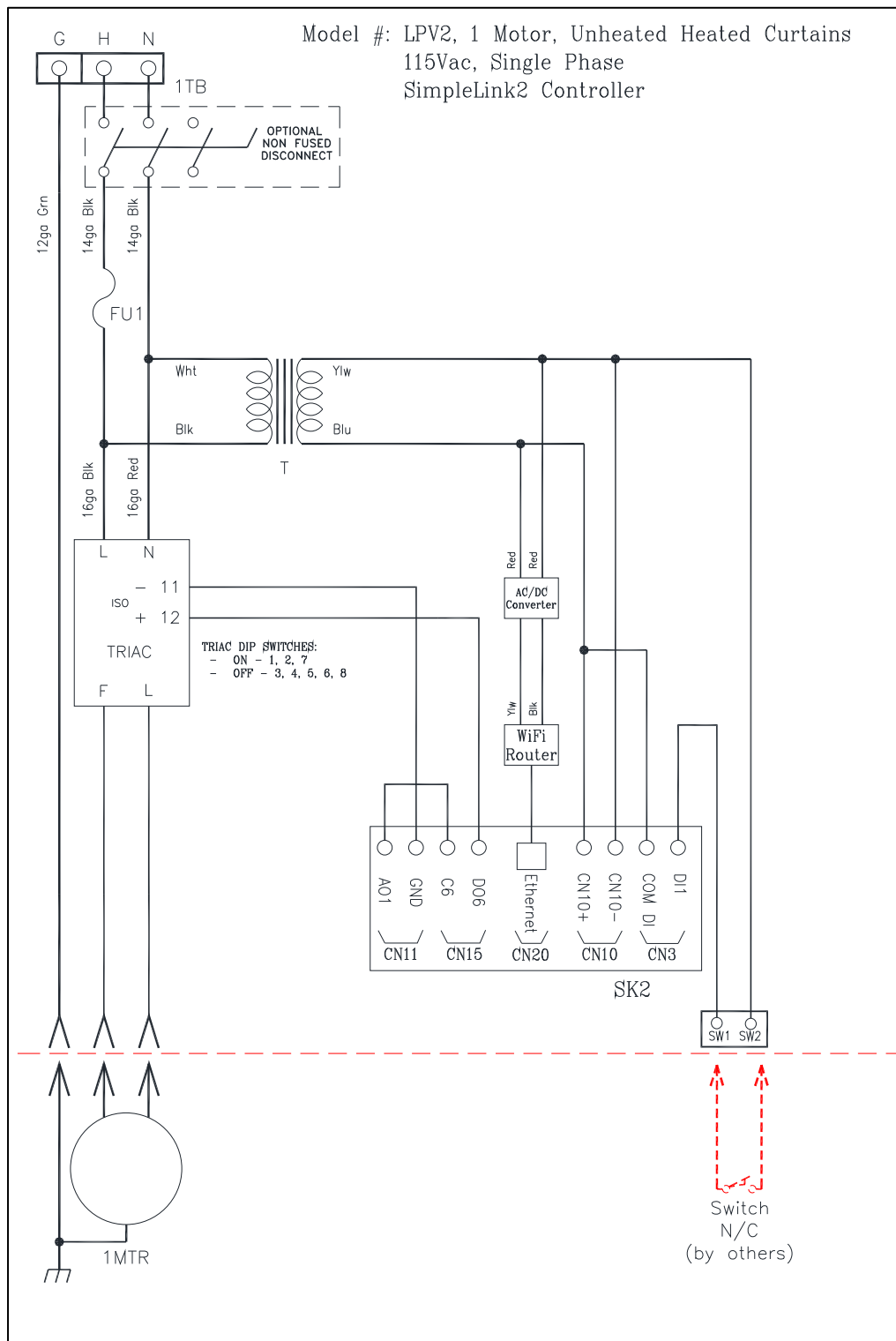
## Typical Motor Control Panel with Time Delay and Three Speed (MCPA-1UA-TD-3S)



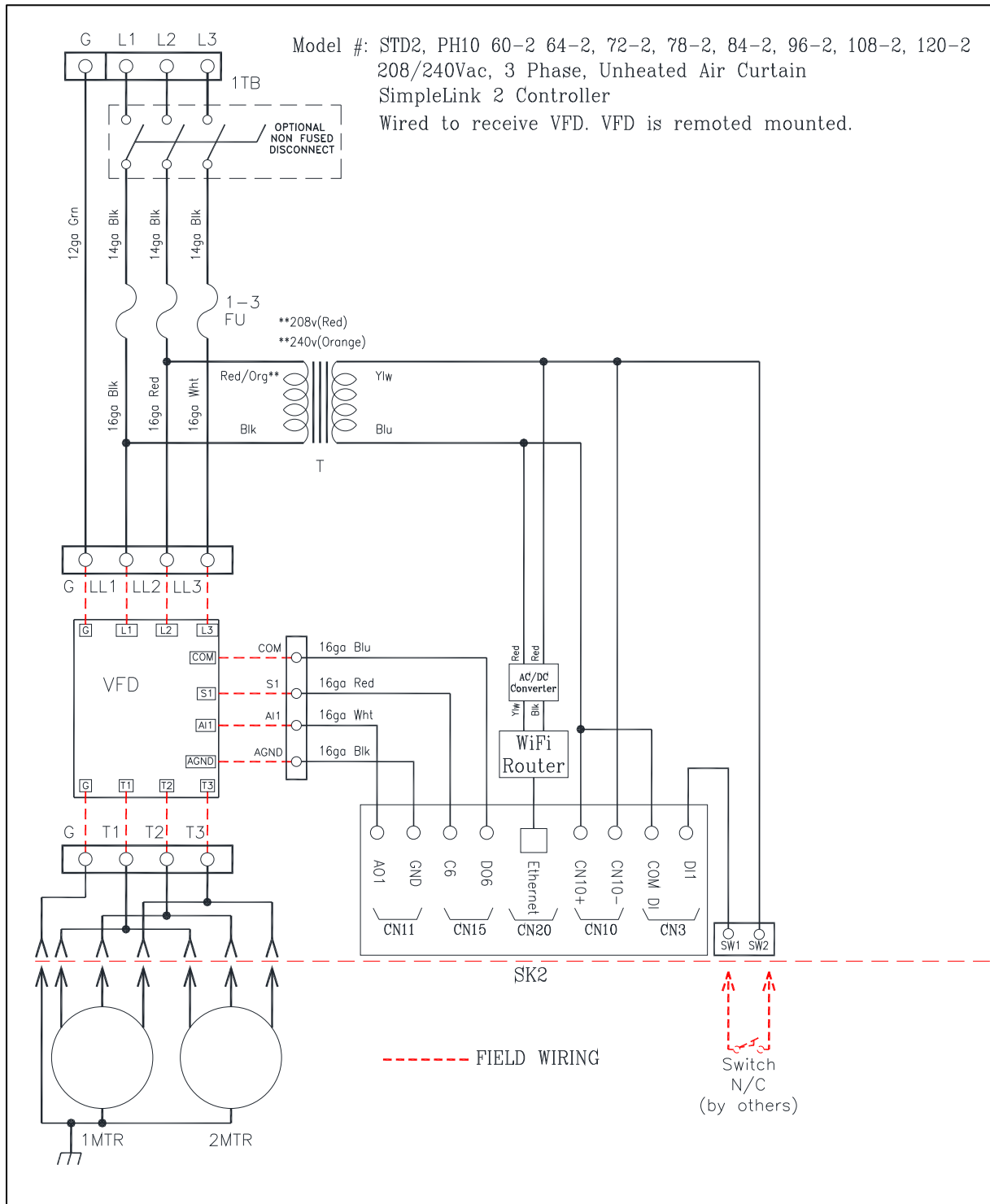
## Typical Motor Control Panel with BMS Monitor & Control (MCPA-3UH-303)



## SimpleLink 2 Controller with TRIAC for LPV2 (MCPS-1UA-SK2)

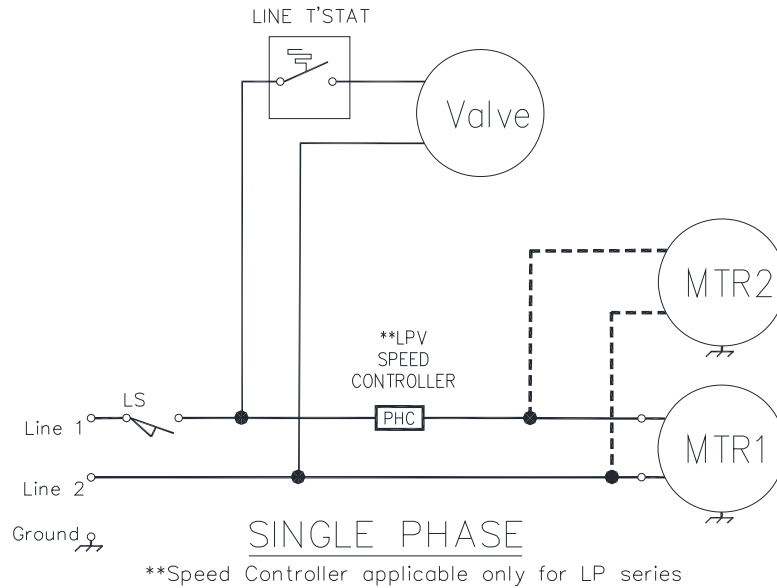


## SimpleLink 2 Controller with Remote VFD for STD2 (MCPA-2UG-SK2-VR)



## Typical HW/S Heated (1Ph, 1Hp max)

### TYPICAL Hot Water/Steam HEATED DIAGRAMS



#### 120/208-240/277v Single Phase Motor

1/6 H.P. Use 15A Micro Switch  
 1/2 H.P. Use 15A Micro Switch  
 1 H.P. Use 20A Micro Switch

#### 120/208-240/277v Single Phase Motor

Larger than 1 H.P. Use Contactor and  
 15A Micro Switch

#### Typical Single Phase Motor Terminal Connections:

For 1/2 HP: <1> is Common for 115V

<1> is Hot for 208/230V

<2> is Low Speed

<3> is High Speed

<4> is Ground

<5> is Medium Speed

For 1 HP: <1> is Common for 115V, 208/230V

<2> is High Speed

<3> is Low Speed

<4> is Ground

Notes: This wiring diagram is applicable for  
 Single Phase motors as follows:

LPV2: Up to 3 motors

STD2: Up to 2 motors

HV2: 1 motor

\*See Door Limit Switch submittal for  
 additional switch info

### S Y M B O L S

LS - Micro Switch

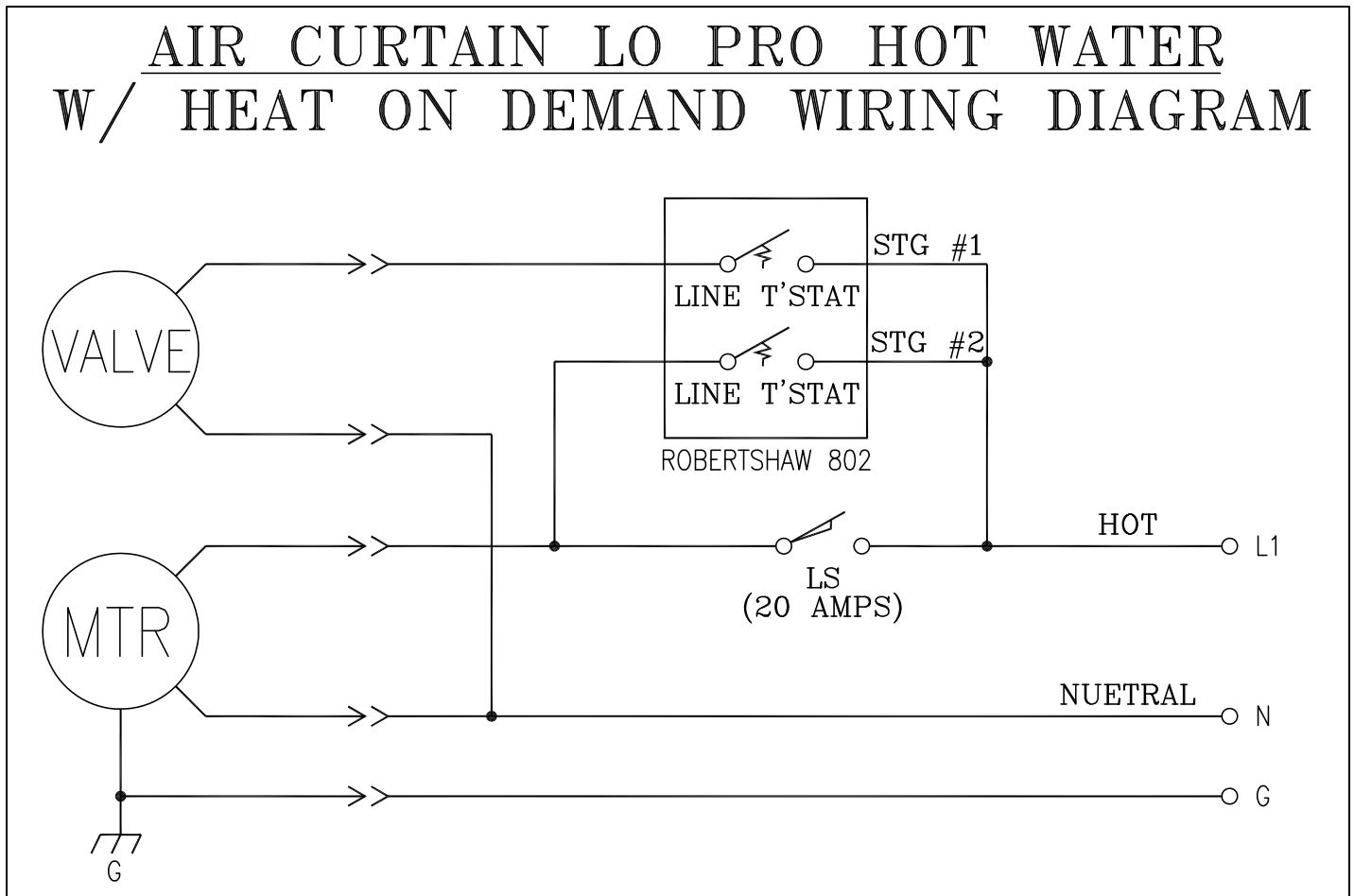
M - Contactor or Motor Starter

MC - Contactor Coil

T - Control Transformer

PHC - Speed Controller (LPV series only)

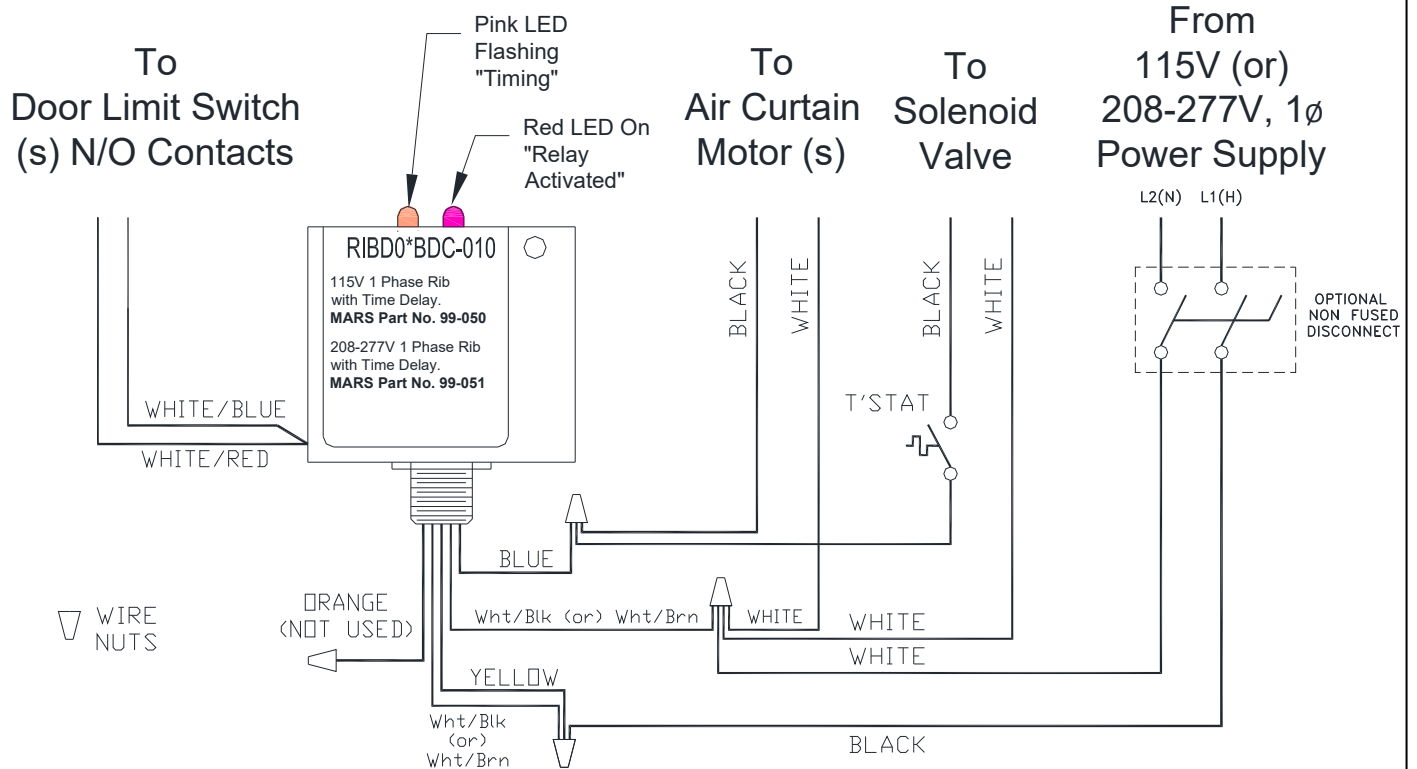
## LPV2 HW/S Heated with Heat on Demand (99-064 Thermostat)



## Typical HW/S Heated with RIB

### RIB Kit Rating:

- 115v or 208-230v
- 1/2 HP Max
- Adjustable Time Delay
- Hot Water/Steam Heat



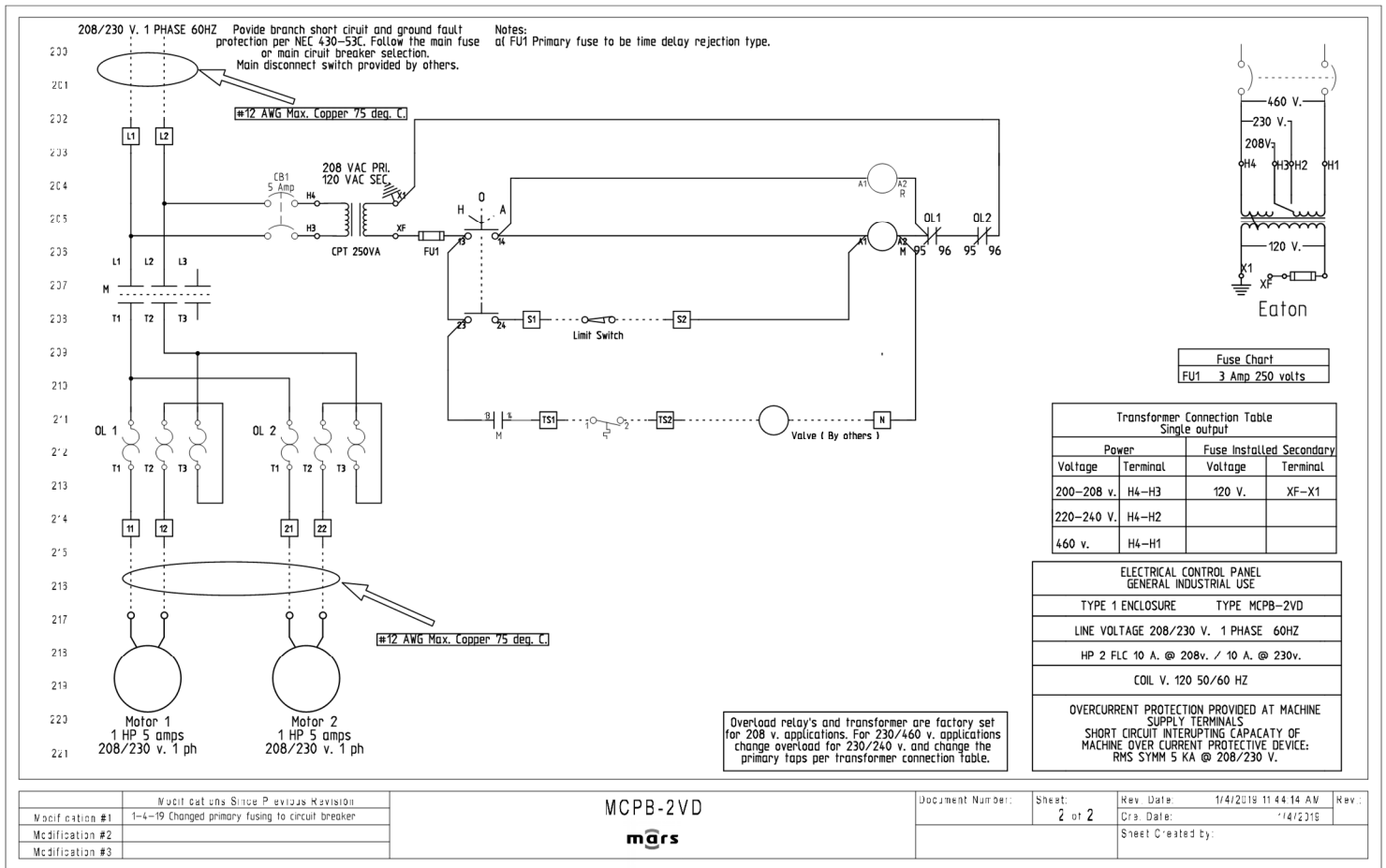
### RIB Kit Part Numbers:

- 115v/1Ø
- J0021, J0028, J0038, J0102
- 208-230v/1Ø
- J0022, J0029, J0042, J0106

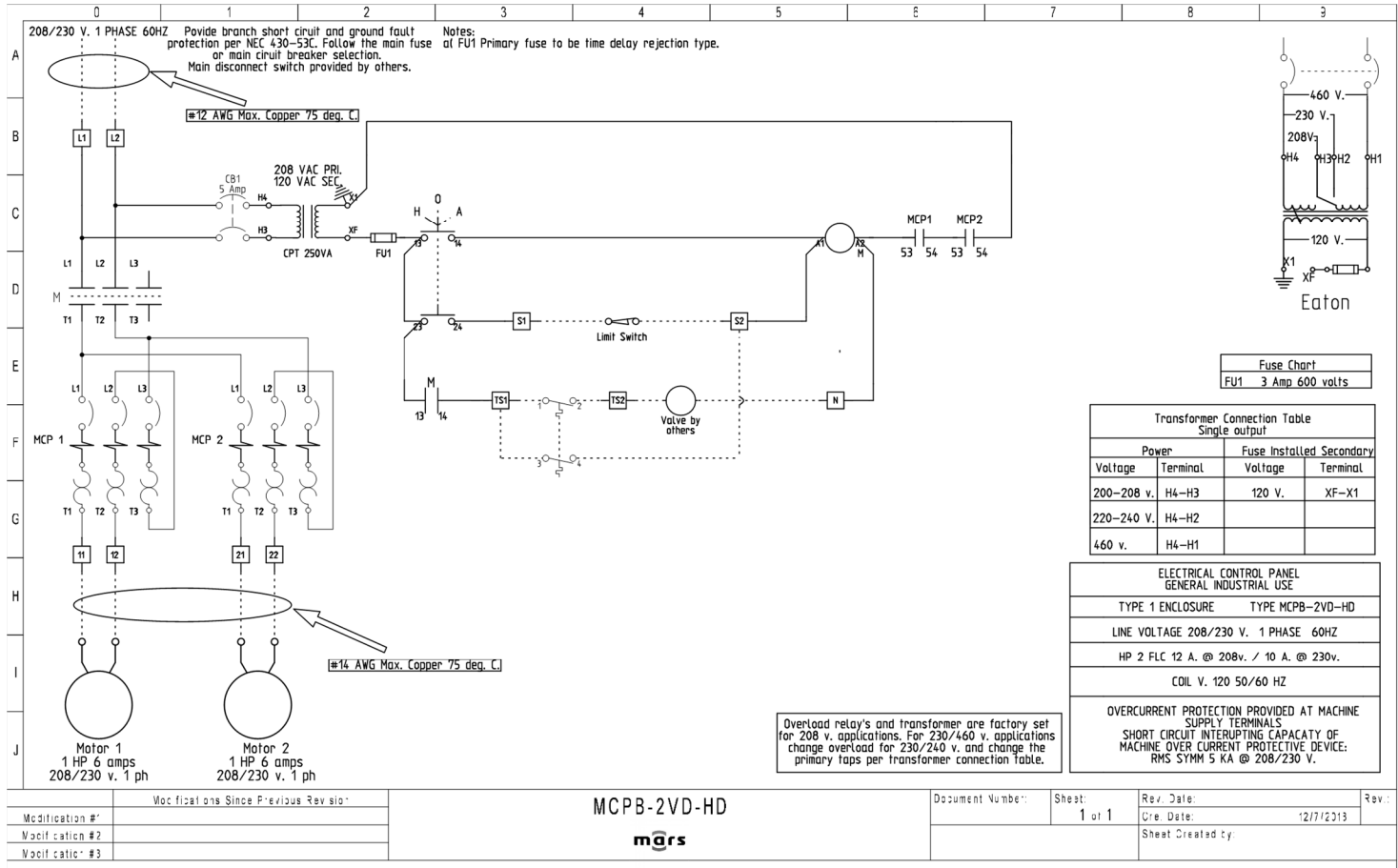
### Note:

The controllers are wired the same, but are not interchangeable.

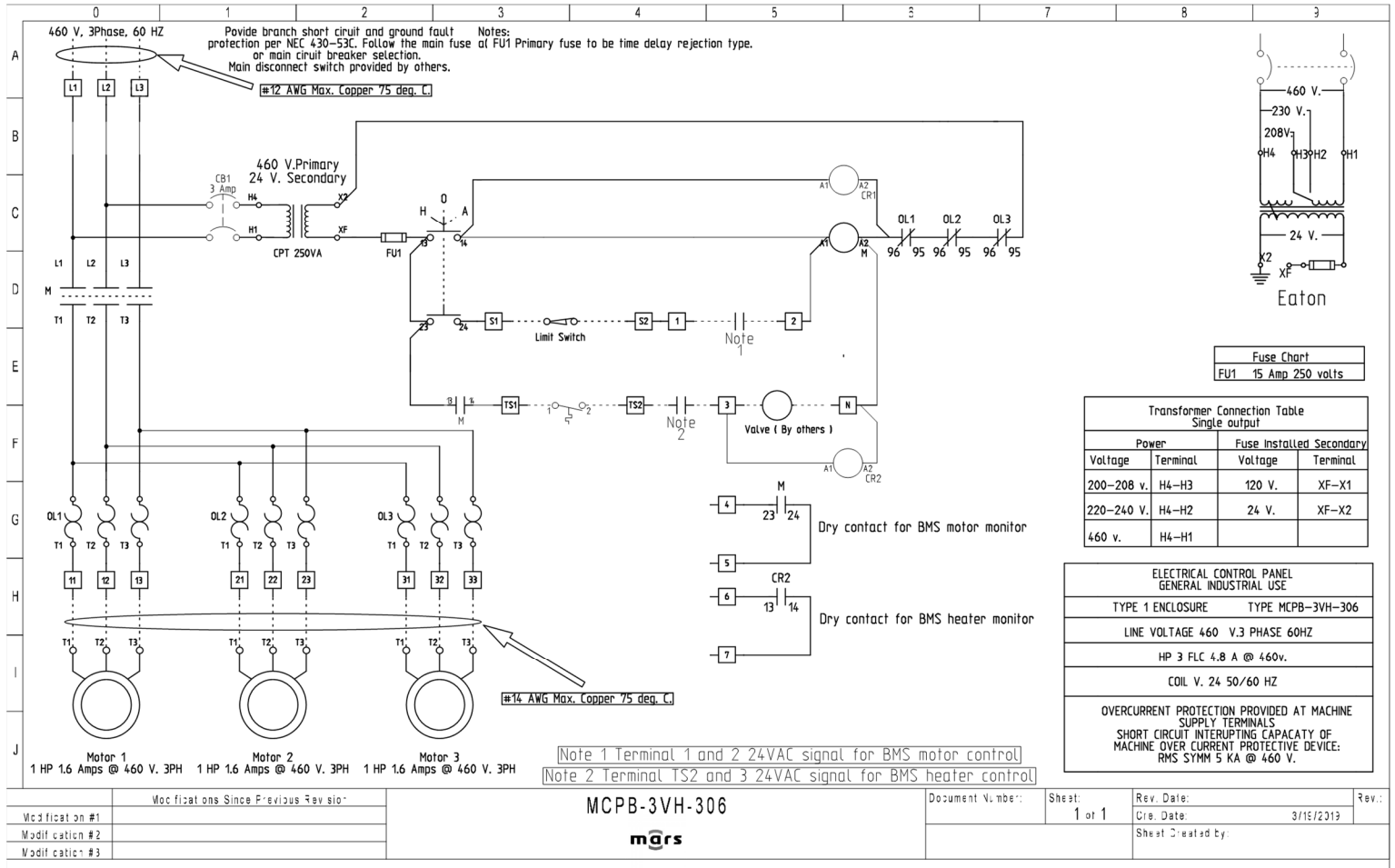
## HW/S Motor Control Panel (MCPB-2VD, 1 Hp, 2 Mtr, 208/230v/1ph/60Hz)



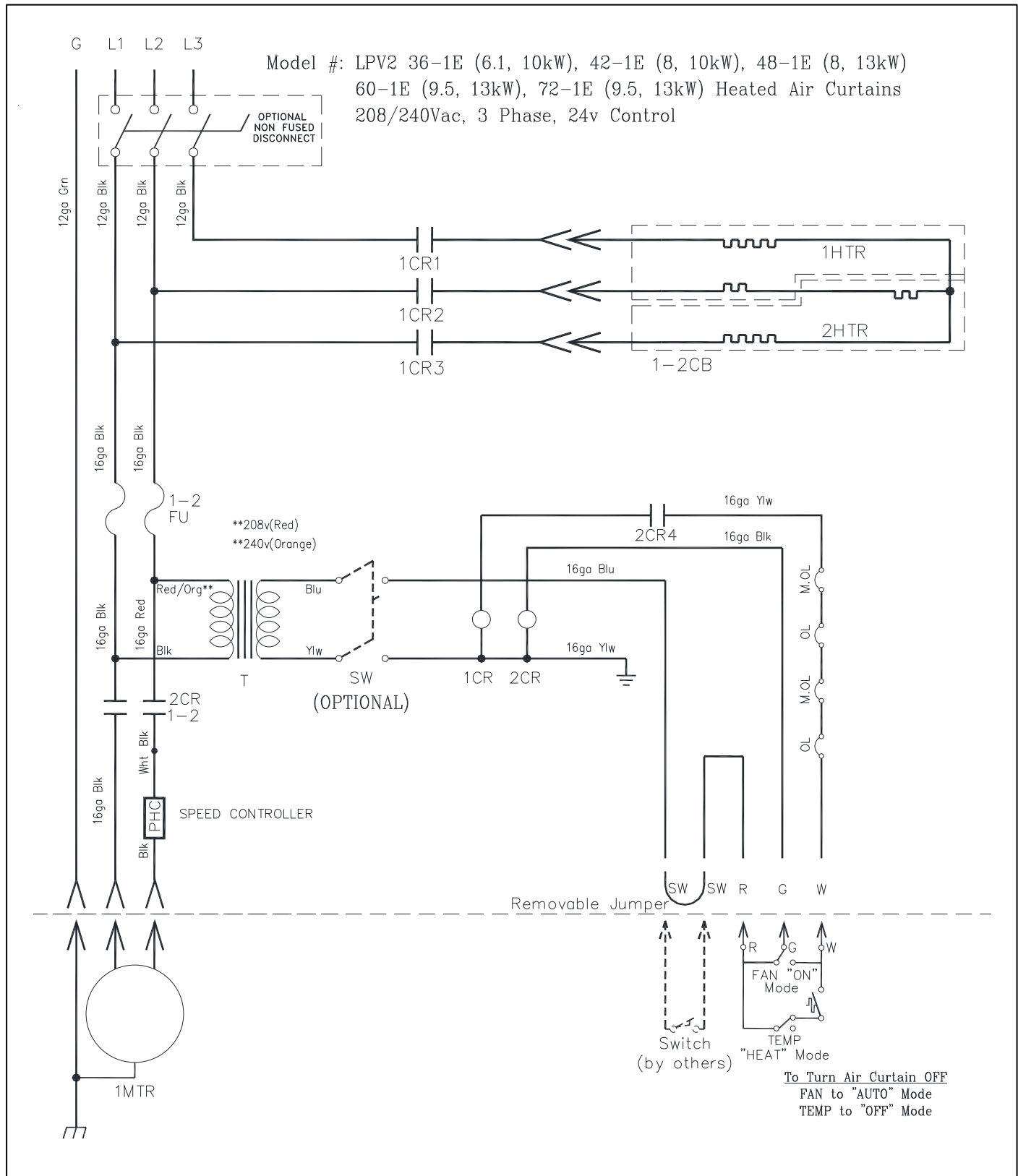
## HW/S Motor Control Panel with Heat on Demand (MCPB-2VD-HD, 1Hp, 2 Mtr, 208/230v, 1ph, 60Hz, Heat on Demand with 2 pole Tstat)



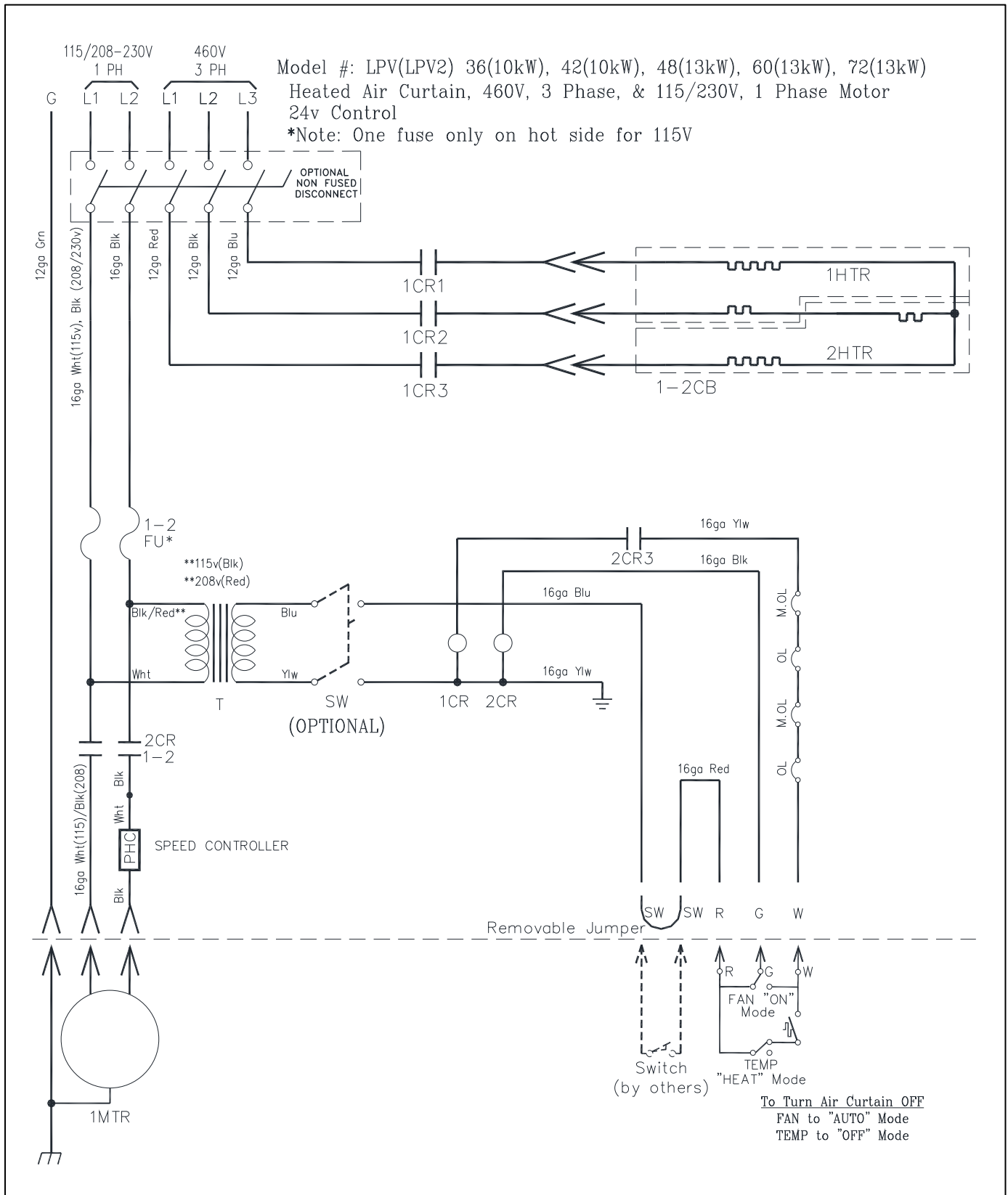
# HW/S Motor Control Panel with BMS Monitor & Control (MCPB-3VH-306, 1 Hp, 3 Mtr, 460v, 3ph)



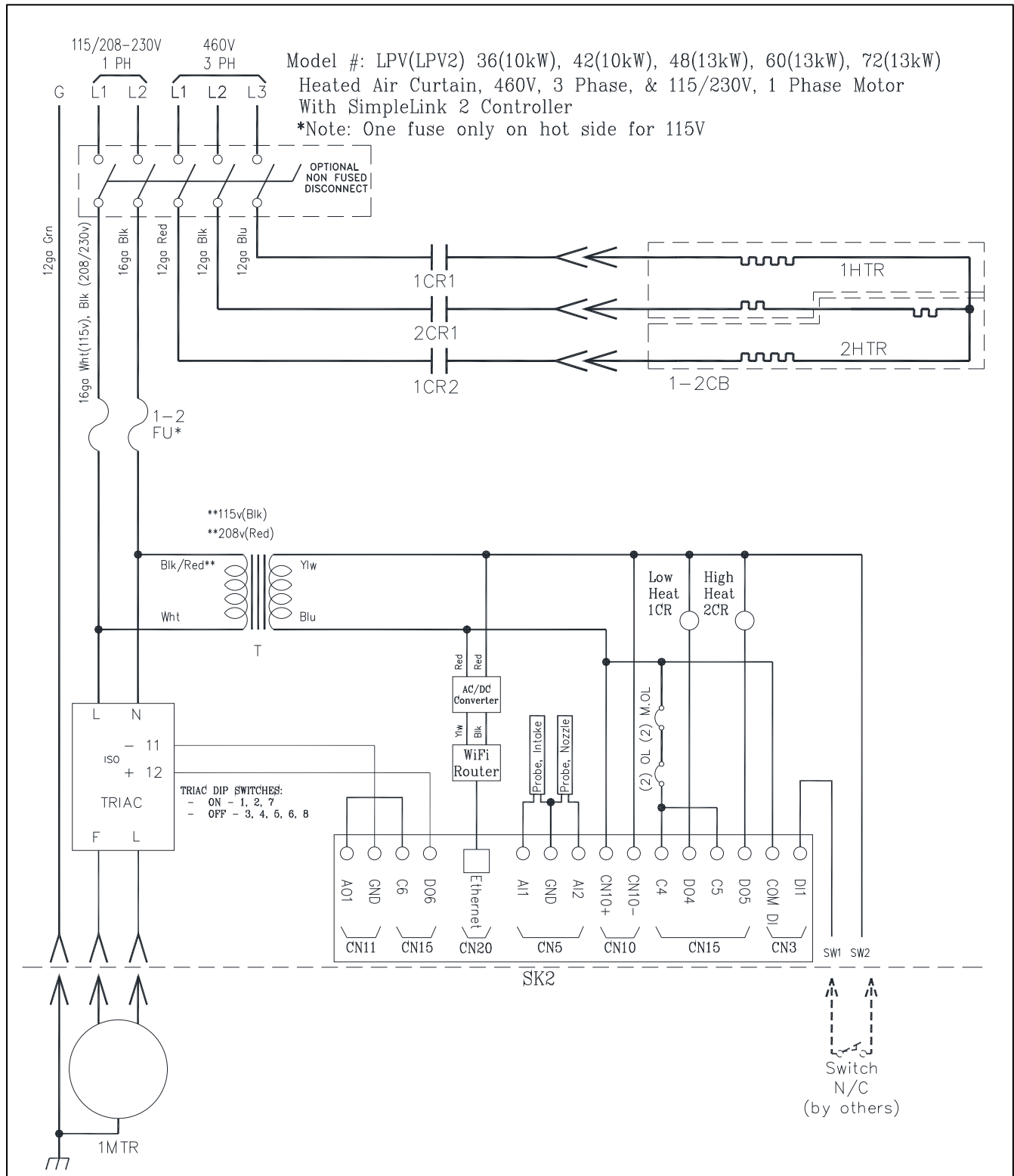
Electric Heated LPV2, 1 Mtr, 208/230v, 3ph



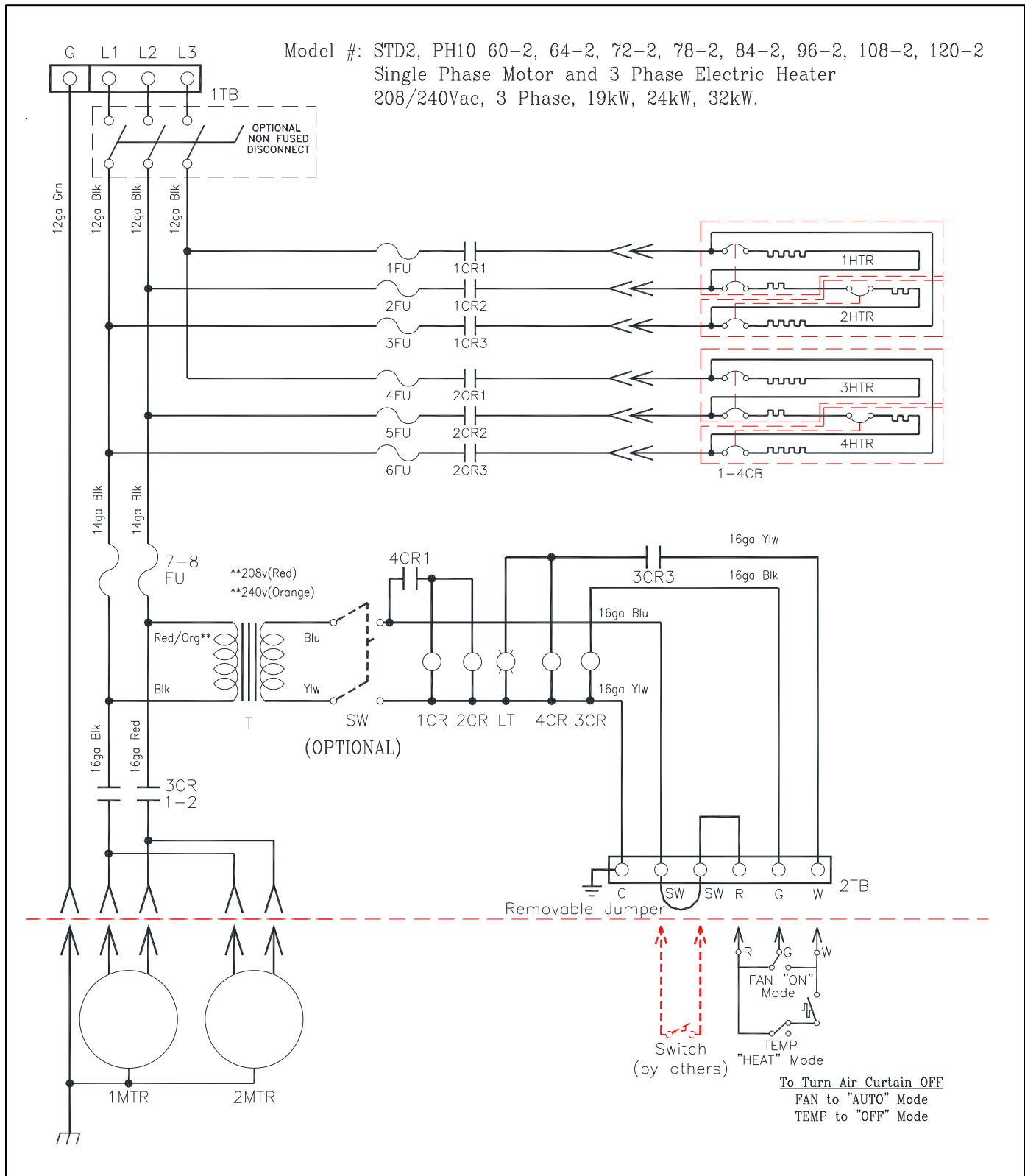
## Electric Heated LPV2, 1 Mtr, 460v/3ph Heater, 115v/1ph Motor



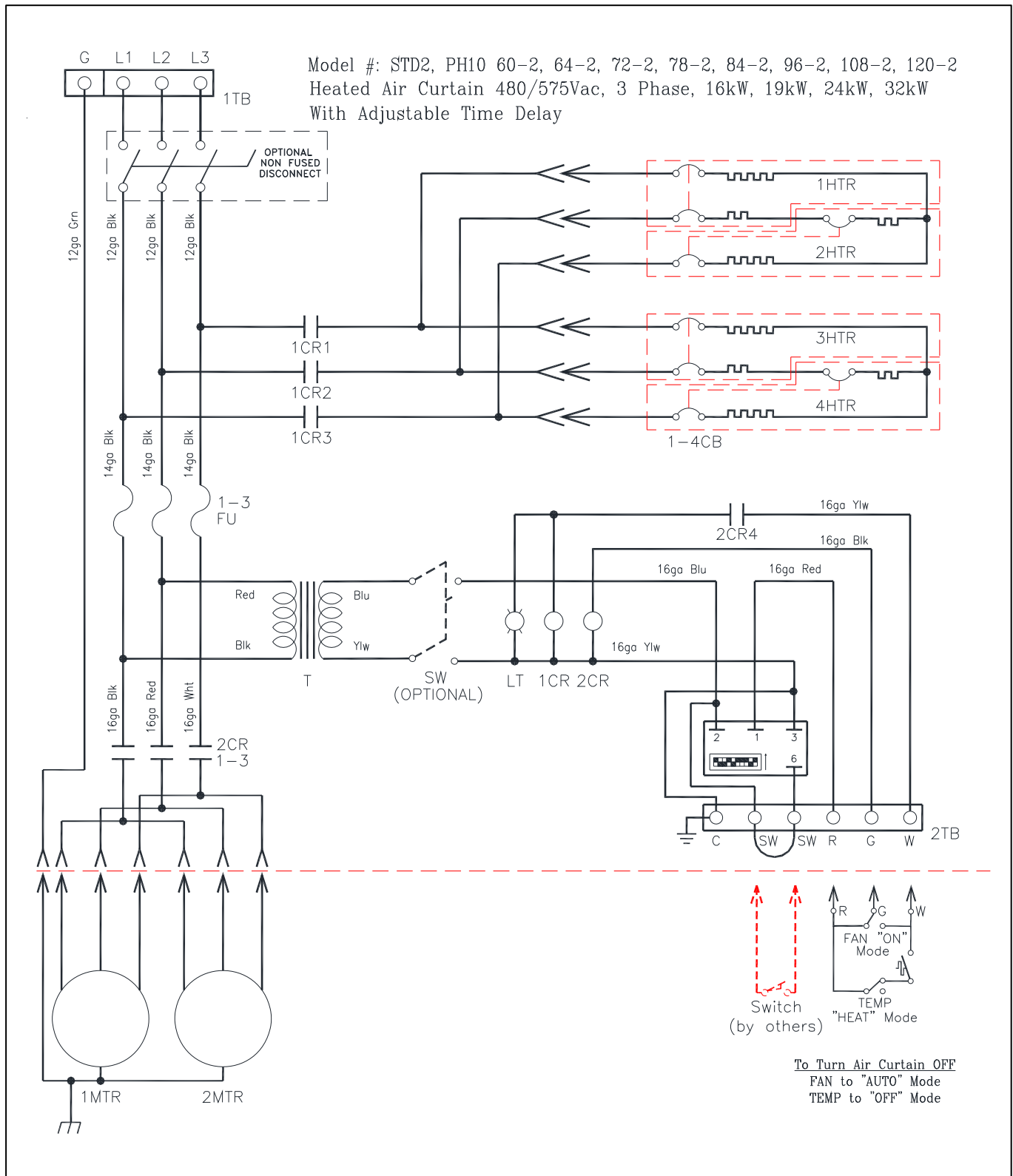
## Electric Heated LPV2, 1 Mtr, 460v/3ph Heater, 115v/1ph Motor, SimpleLink Controller



Electric Heated STD2, 2 Mtr, 208/230v, 3ph



## Electric Heated STD2, 2 Mtr, 460v, 3ph, Time Delay



## Electric Heated STD2, 2 Mtr, 460v, 3ph, SimpleLink 2 Controller

