

# Mars Air Systems

## Typical Air Curtain Wiring Diagrams

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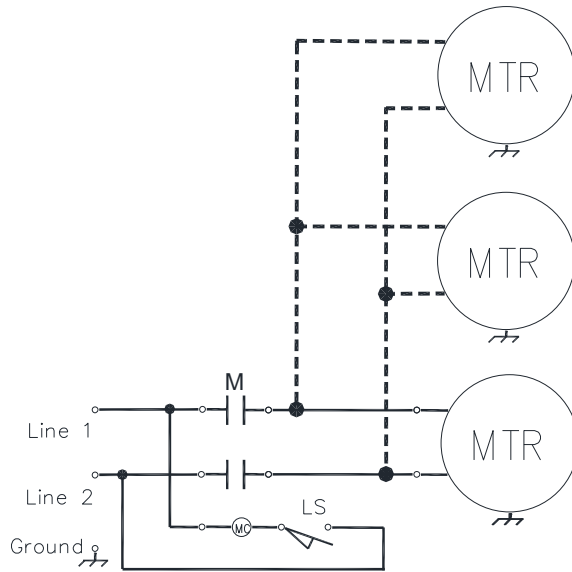
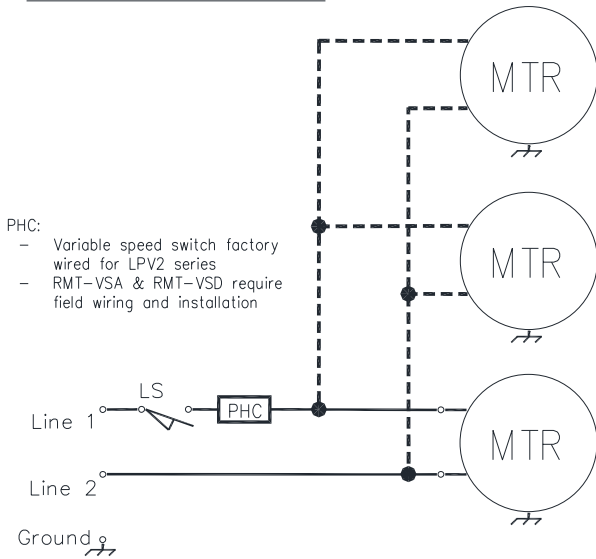
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## Typical Wiring Diagrams

### SINGLE PHASE TYPICAL UNHEATED DIAGRAMS



120/208-240/277v Single Phase Motor

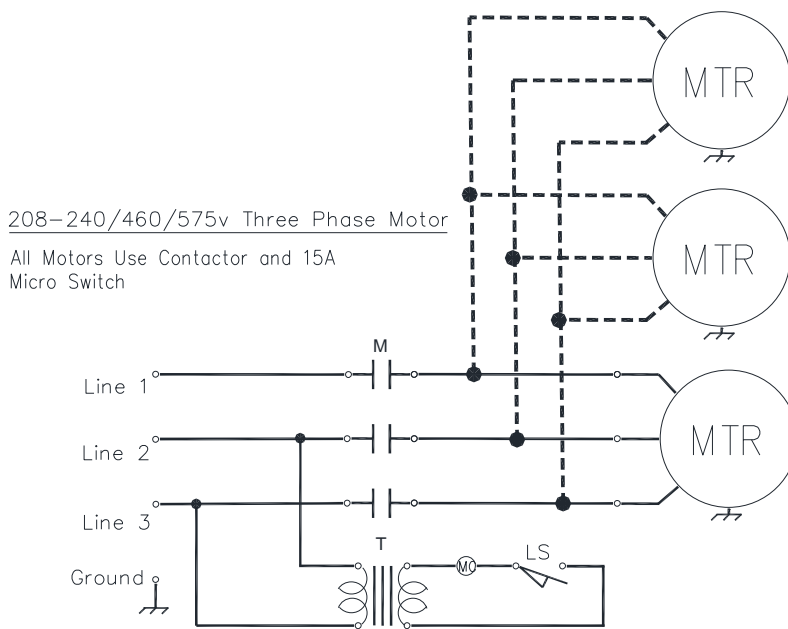
- 1/6 H.P. Use 15A Micro Switch
- 1/2 H.P. Use 15A Micro Switch
- 1 H.P. Use 20A Micro Switch

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:

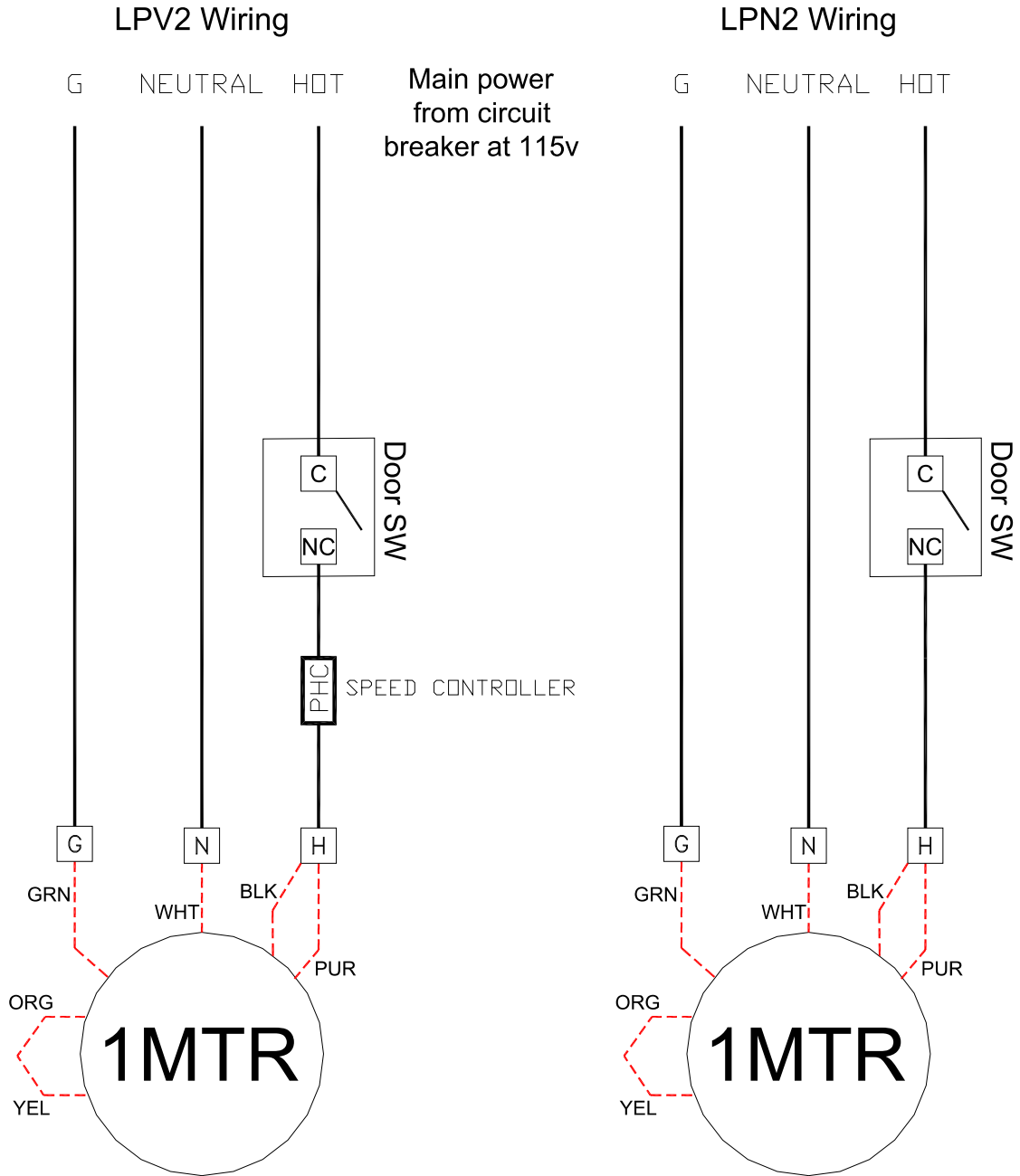
- LPV2: Up to 3 motors
- STD2: Up to 2 motors
- HV2: 1 motor

\*See Door Limit Switch submittal for additional switch info

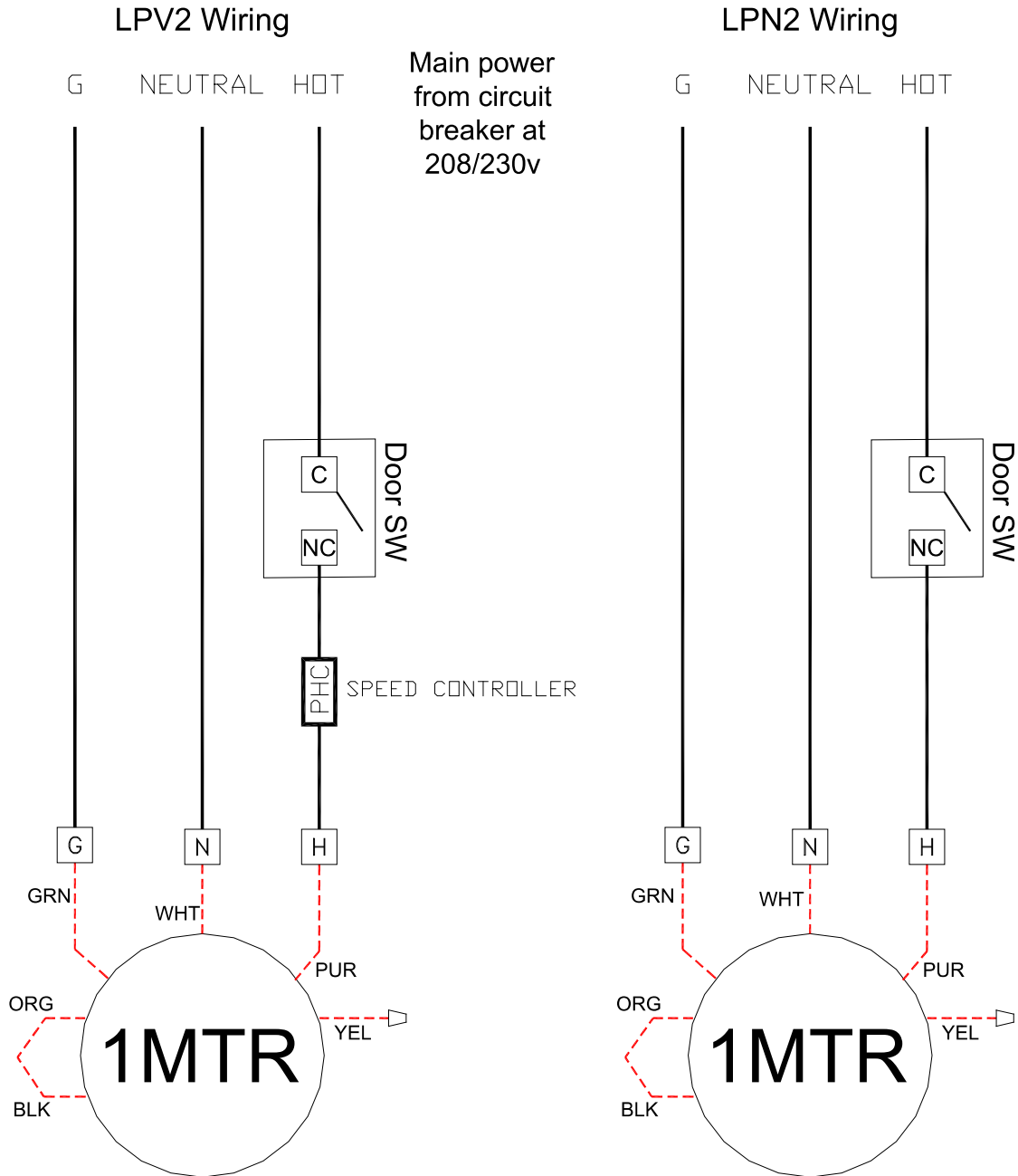
### S Y M B O L S

- LS - Micro Switch
- M - Contactor or Motor Starter
- MC - Contactor Coil
- T - Control Transformer
- PHC - Speed Controller (LPV series only)

## LPV2/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**

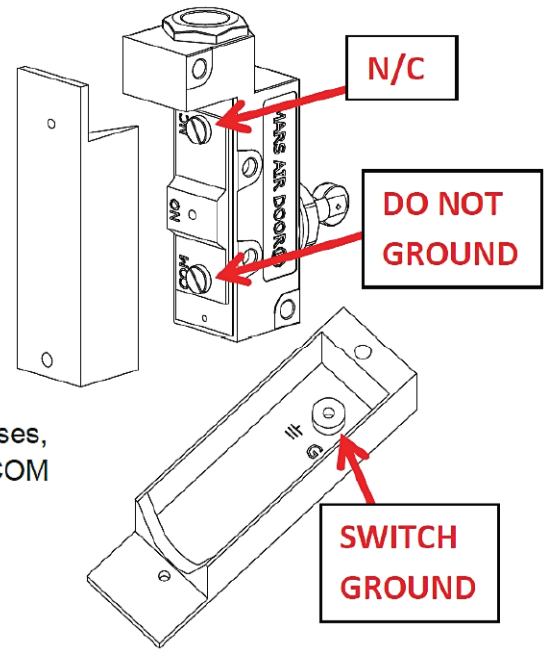
Damage caused by grounding the COM will not be covered under warranty.

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)

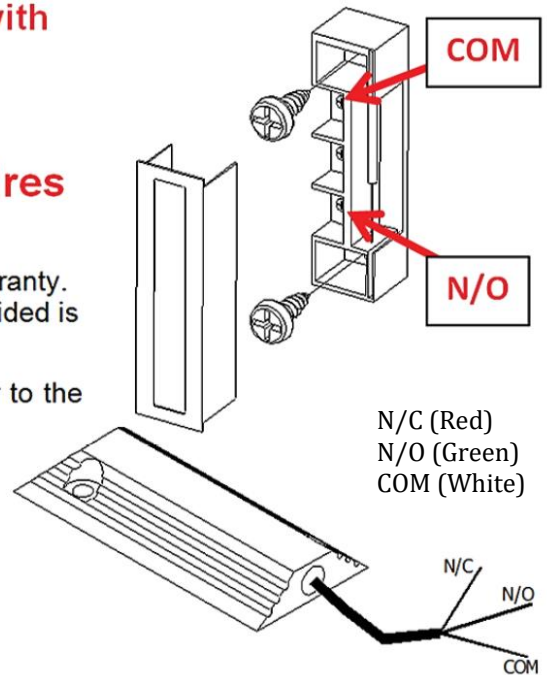
#### **DO NOT GROUND the Green or White wires or COM (24V) terminals**

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.

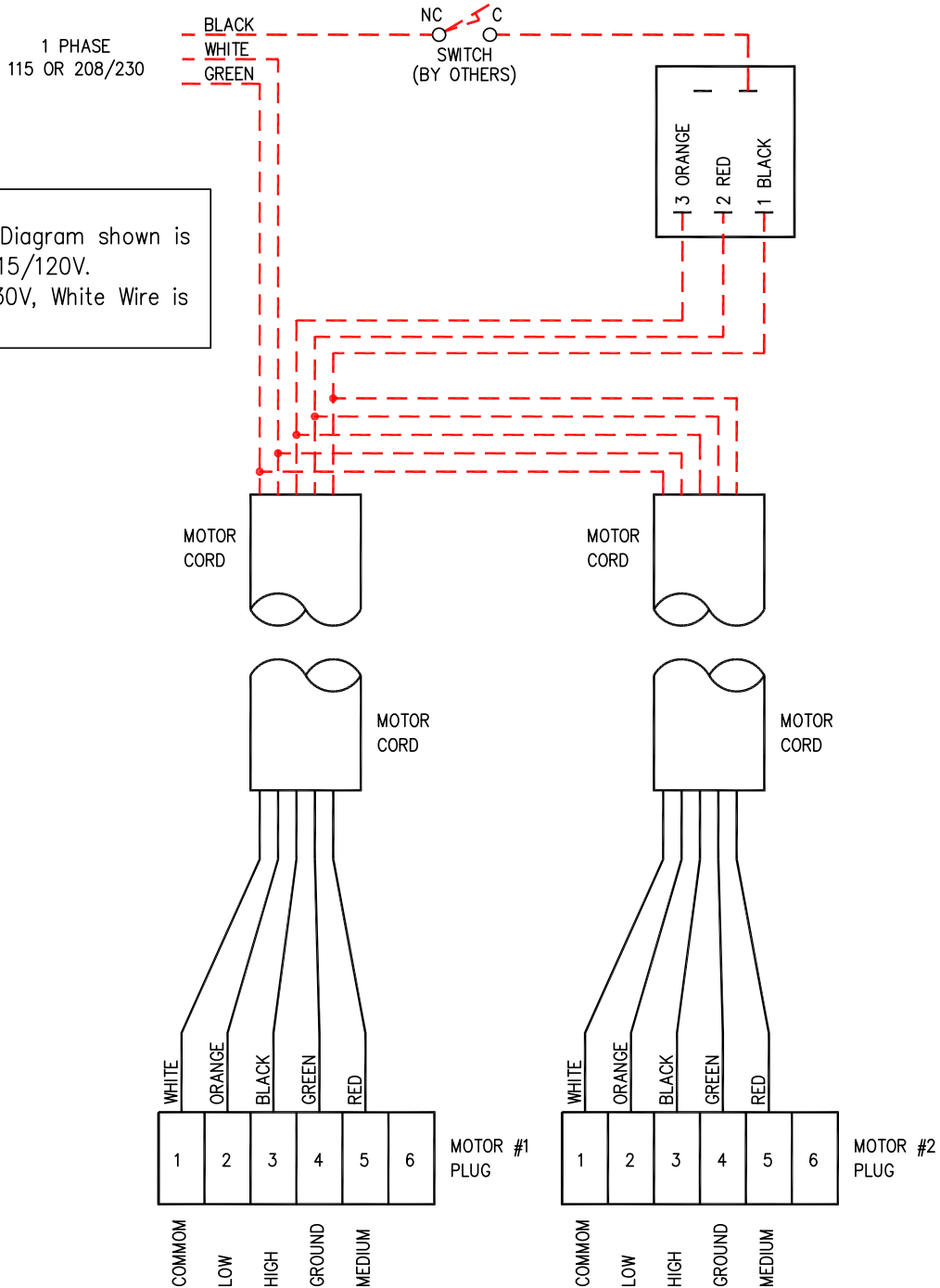


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## Three Speed Switch and Cord

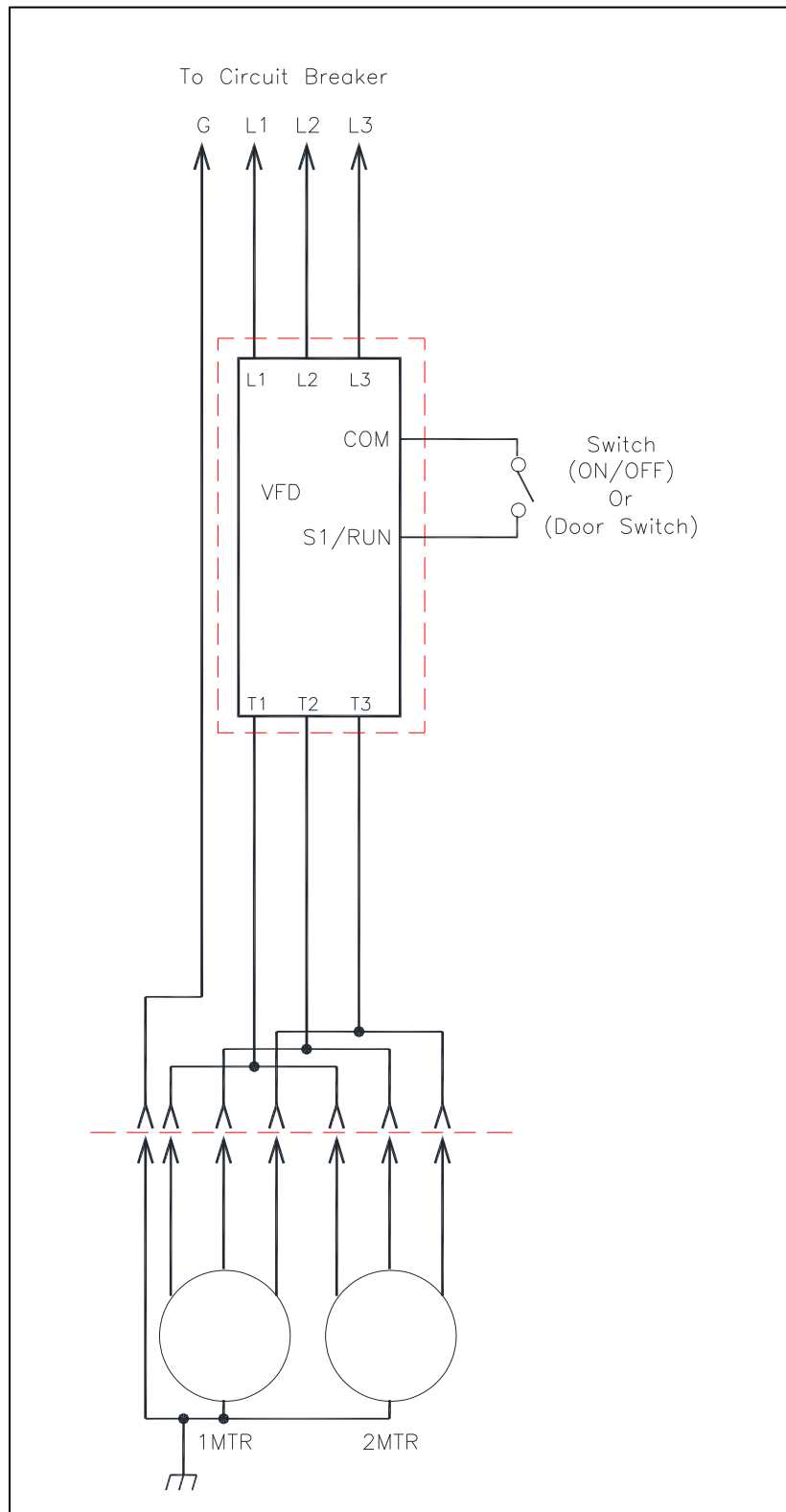
Three Speed, (2) Single Phase, 1/2 HP Motor Plug and Switch Connection.  
(FIELD WIRING - - - - -)



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

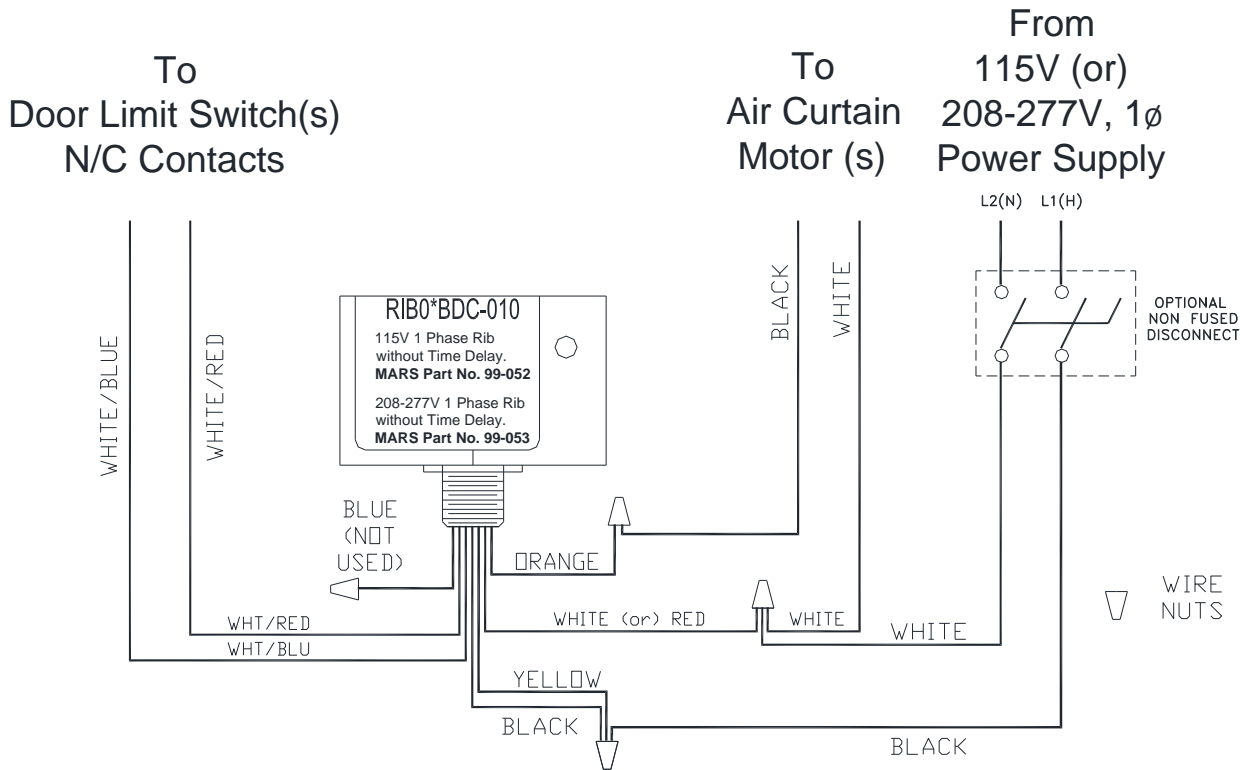




## RIB, ½ HP with No Time Delay

### 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

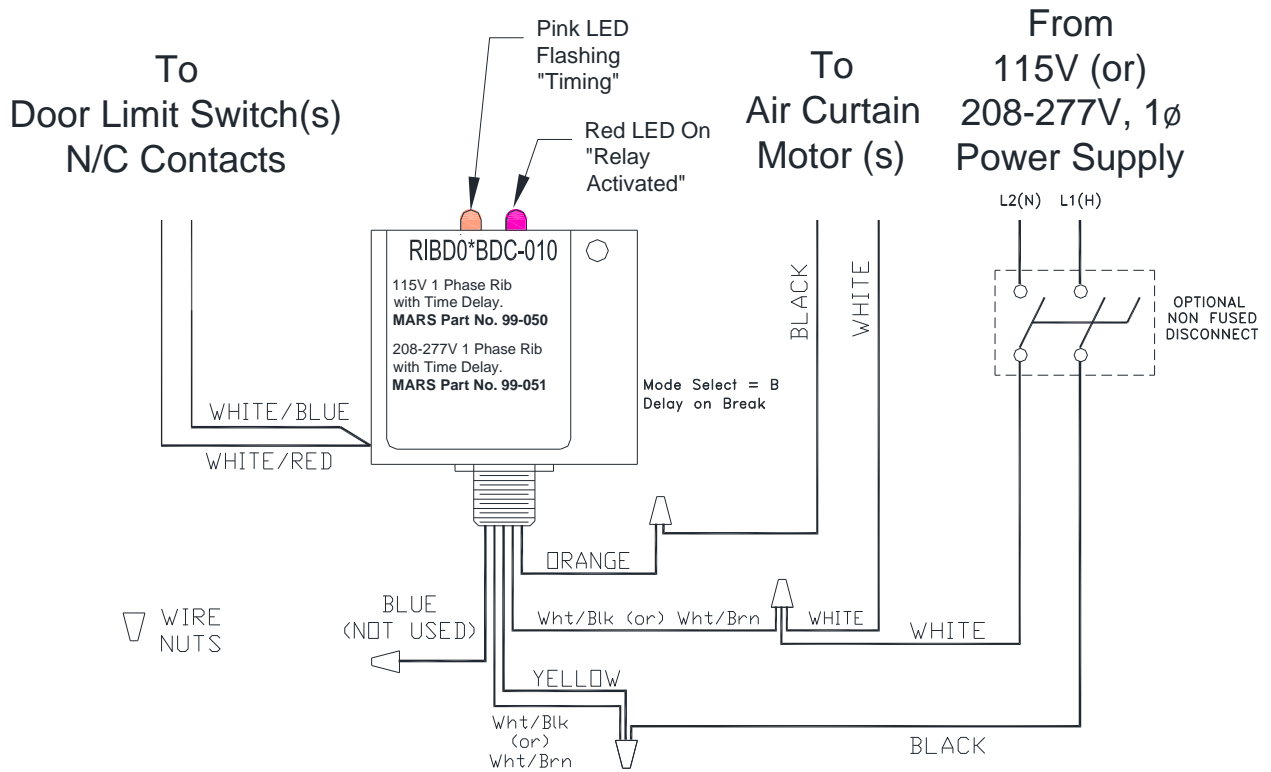
### Note:

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

## RIB, 1/2 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

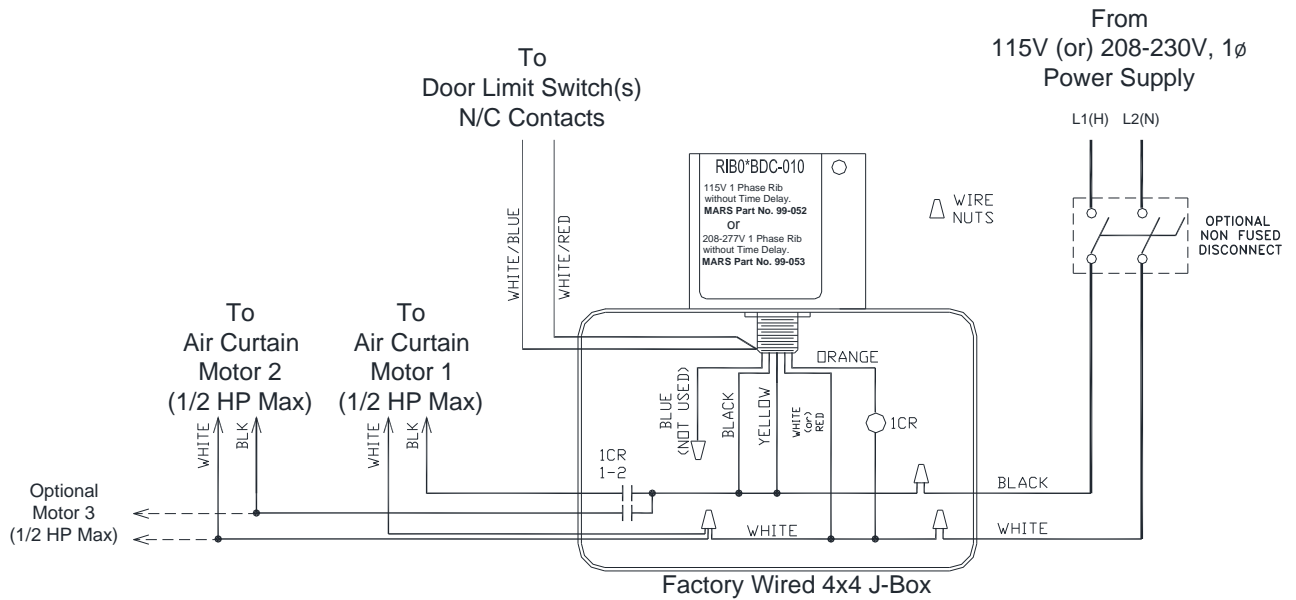
### Note:

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



### RIB Kit Part Numbers:

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

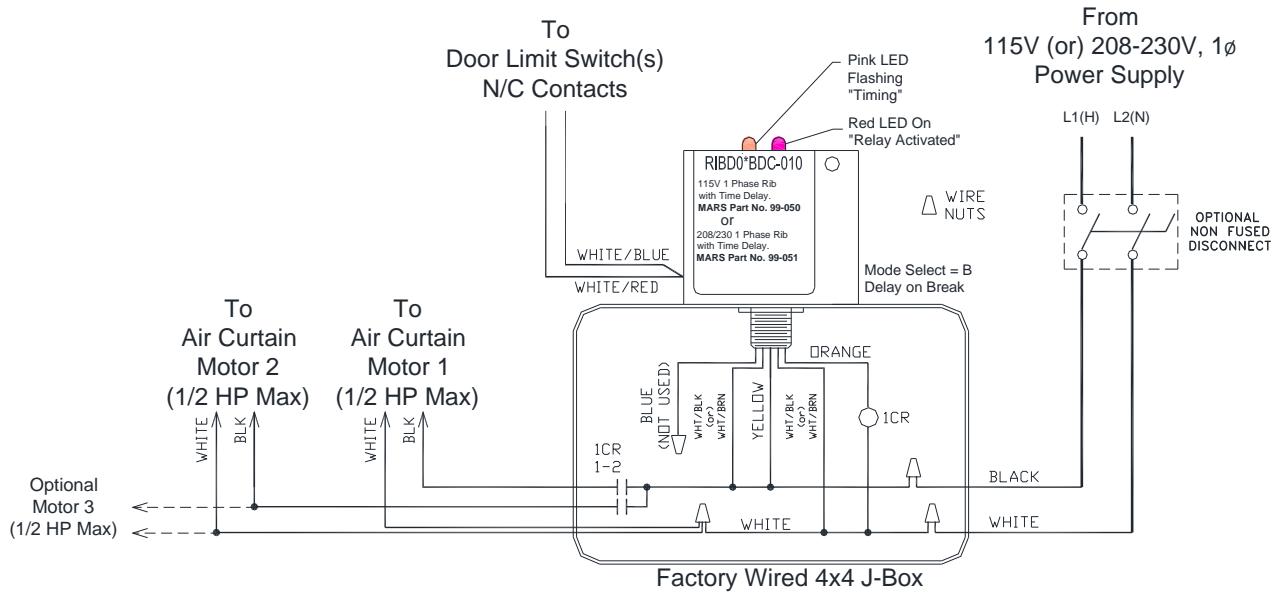
### Note:

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
- Adjustable Time Delay



### RIB Kit Part Numbers:

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

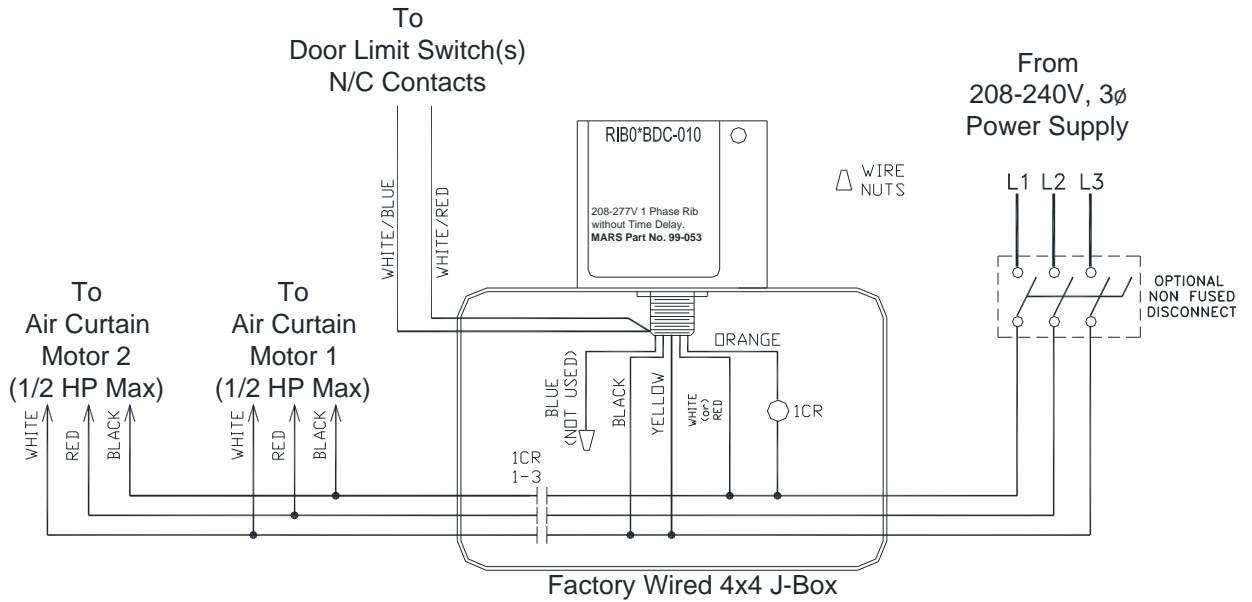
### Note:

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

## RIB 1 HP with No Time Delay and 208-230v Three Phase Power

### RIB Kit Rating:

- 208-230v/3 $\phi$
- 1 HP Max



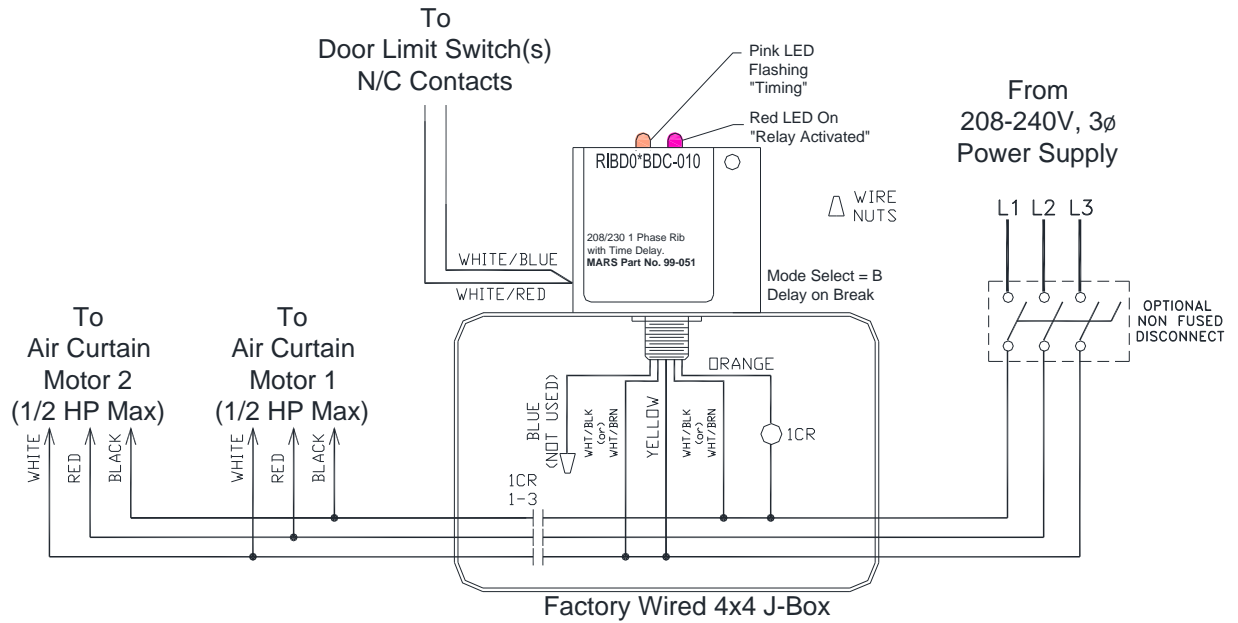
### RIB Kit Part Numbers:

- 208-230v/3ph
- J0760, J0761, J0762

## RIB 1 HP with Time Delay and 208-230v Three Phase Power

### RIB Kit Rating:

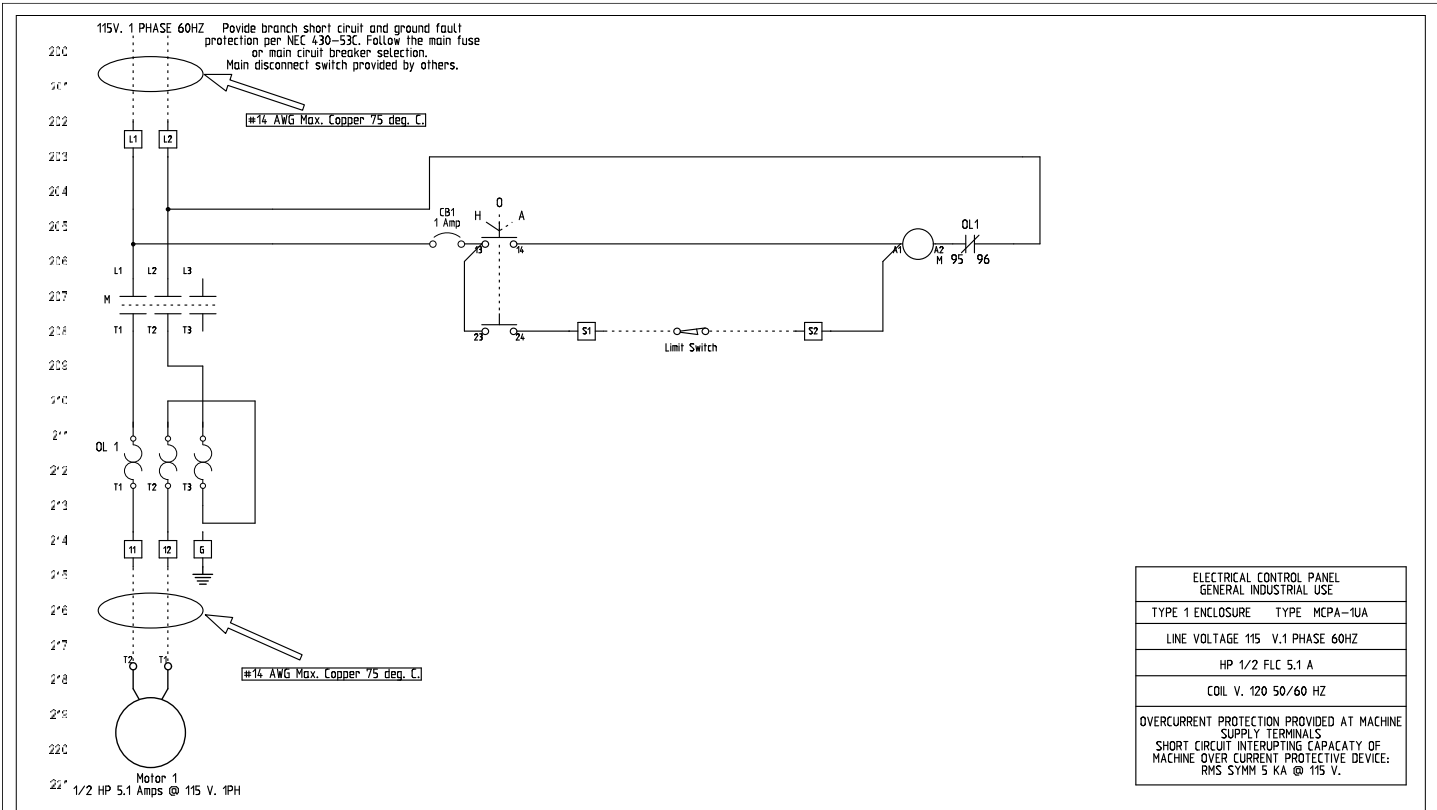
- 208-230v/3 $\phi$
- 1 HP Max
- Adjustable Time Delay



### RIB Kit Part Numbers:

- 208-230v/3ph
- J0767, J0764, J0765, J0766

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

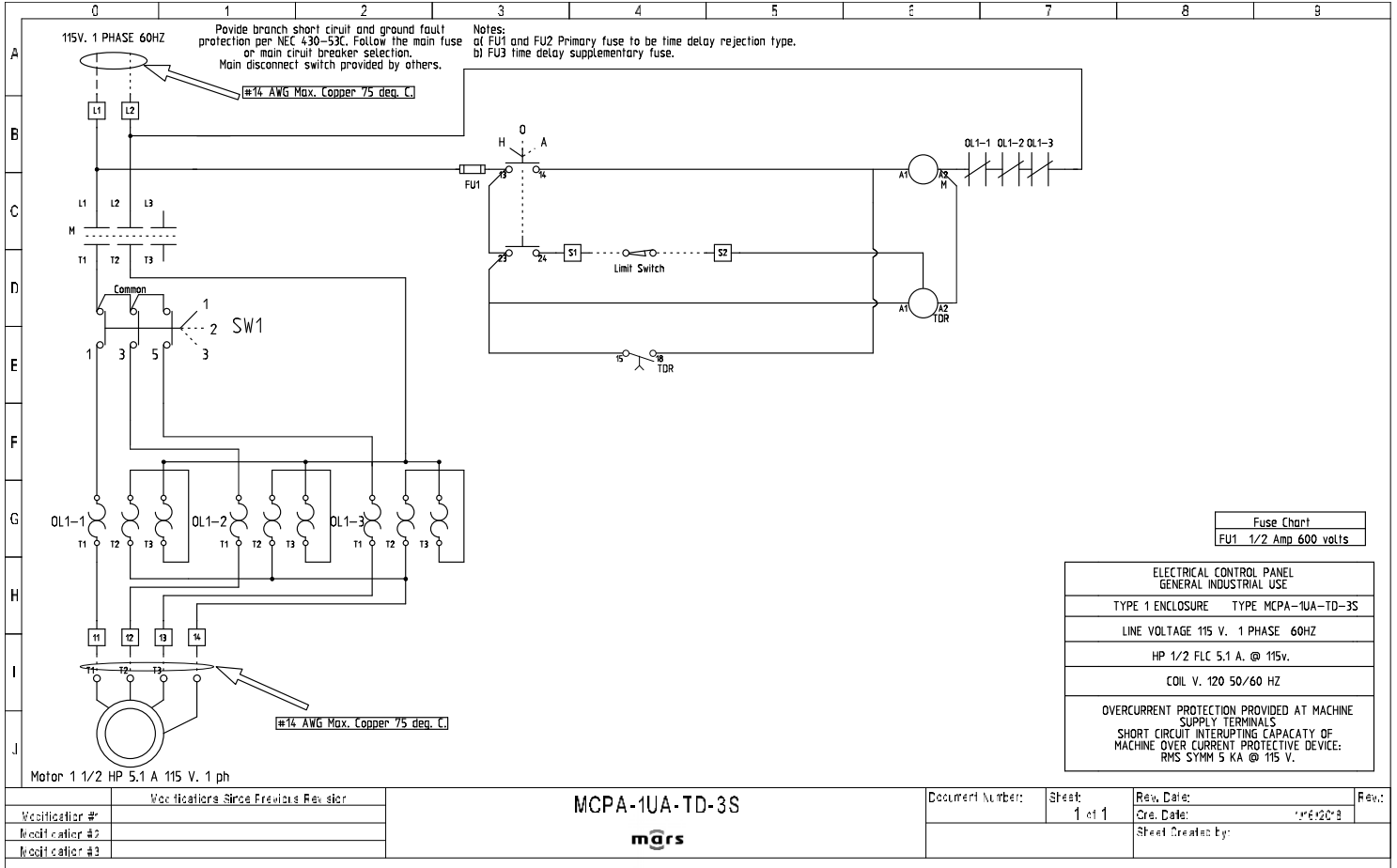


Modification #	Description Since Previous Revision
Modification #1	
Modification #2	
Modification #3	

**MCPA-1UA**  
**mars**

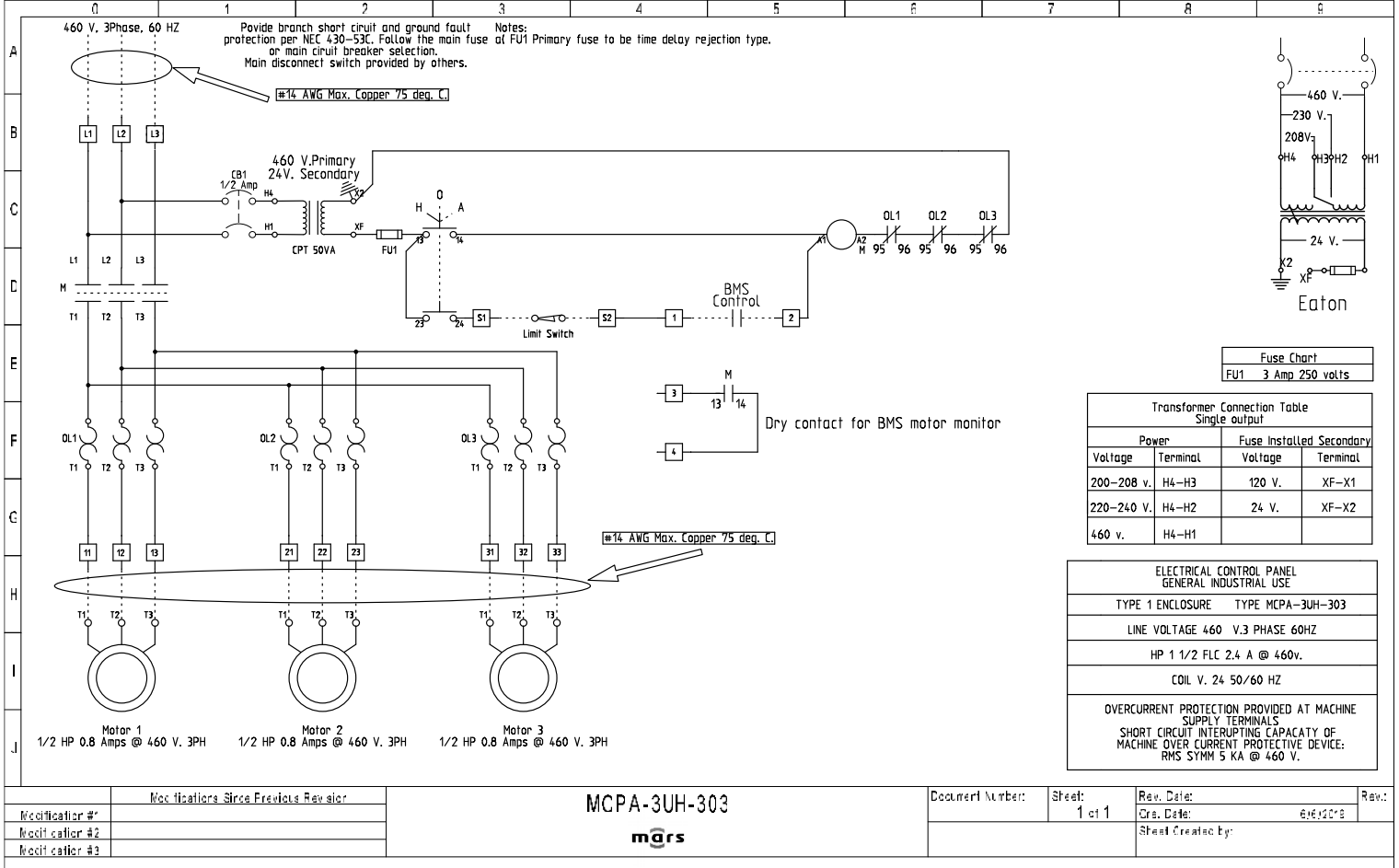
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		Cre. Date: 2/12/2015	
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## Typical Motor Control Panel with Time Delay and Three Speed (MCPA-1UA-TD-3S)





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



Fuse Chart	
FU1	3 Amp 250 volts

Transformer Connection Table Single output			
Power		Fuse Installed Secondary	
Voltage	Terminal	Voltage	Terminal
200-208 v.	H4-H3	120 V.	XF-X1
220-240 V.	H4-H2	24 V.	XF-X2
460 v.	H4-H1		

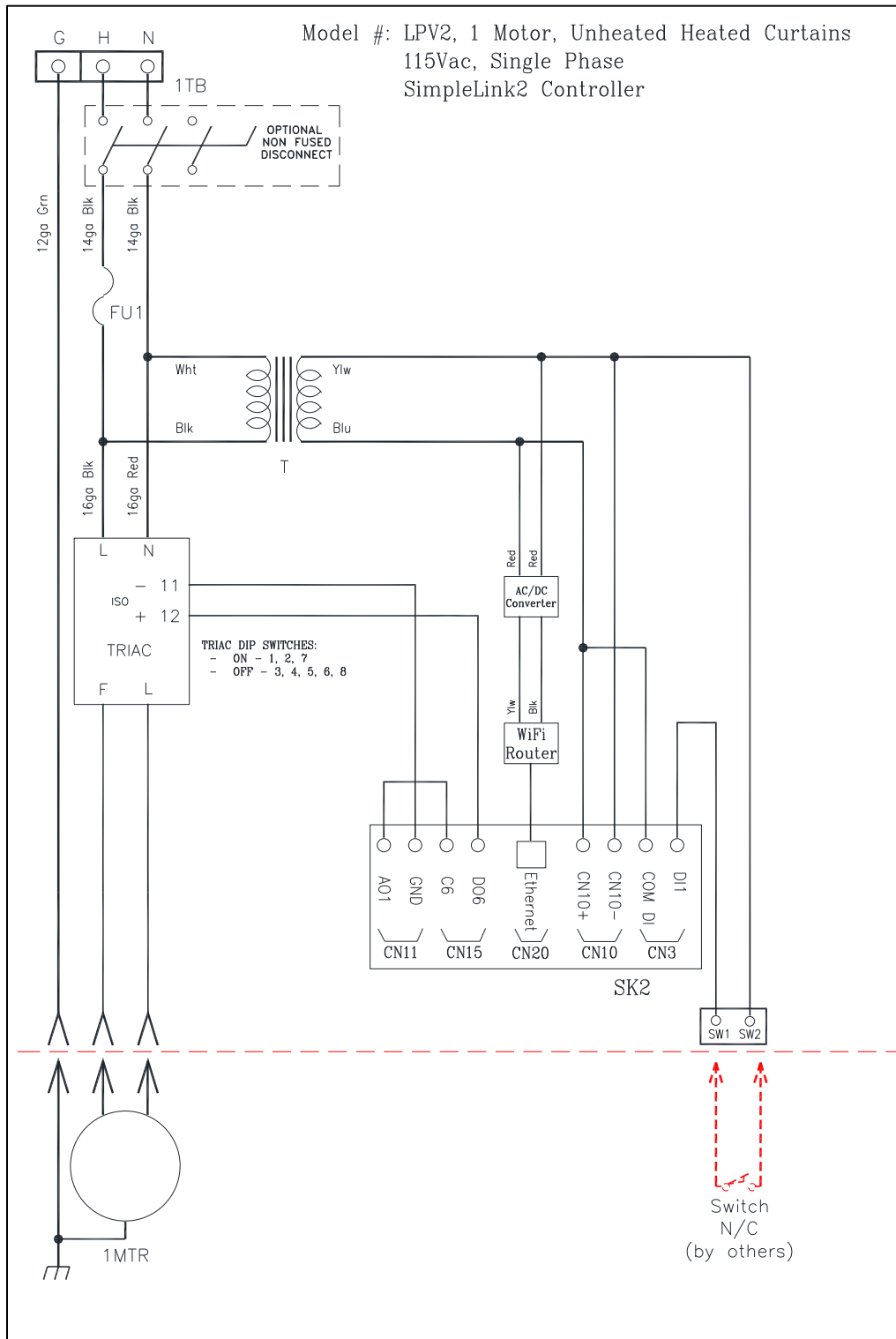
ELECTRICAL CONTROL PANEL GENERAL INDUSTRIAL USE	
TYPE 1 ENCLOSURE	TYPE MCPA-3UH-303
LINE VOLTAGE 460 V.3 PHASE 60HZ	
HP 1 1/2 FLC 2.4 A @ 460v.	
COIL V. 24 50/60 HZ	
OVERCURRENT PROTECTION PROVIDED AT MACHINE SUPPLY TERMINALS SHORT CIRCUIT INTERRUPTING CAPACITY OF MACHINE OVER CURRENT PROTECTIVE DEVICE: RMS SYMM 5 KA @ 460 V.	

Modifications Since Previous Revision	
Modification #1	
Modification #2	
Modification #3	

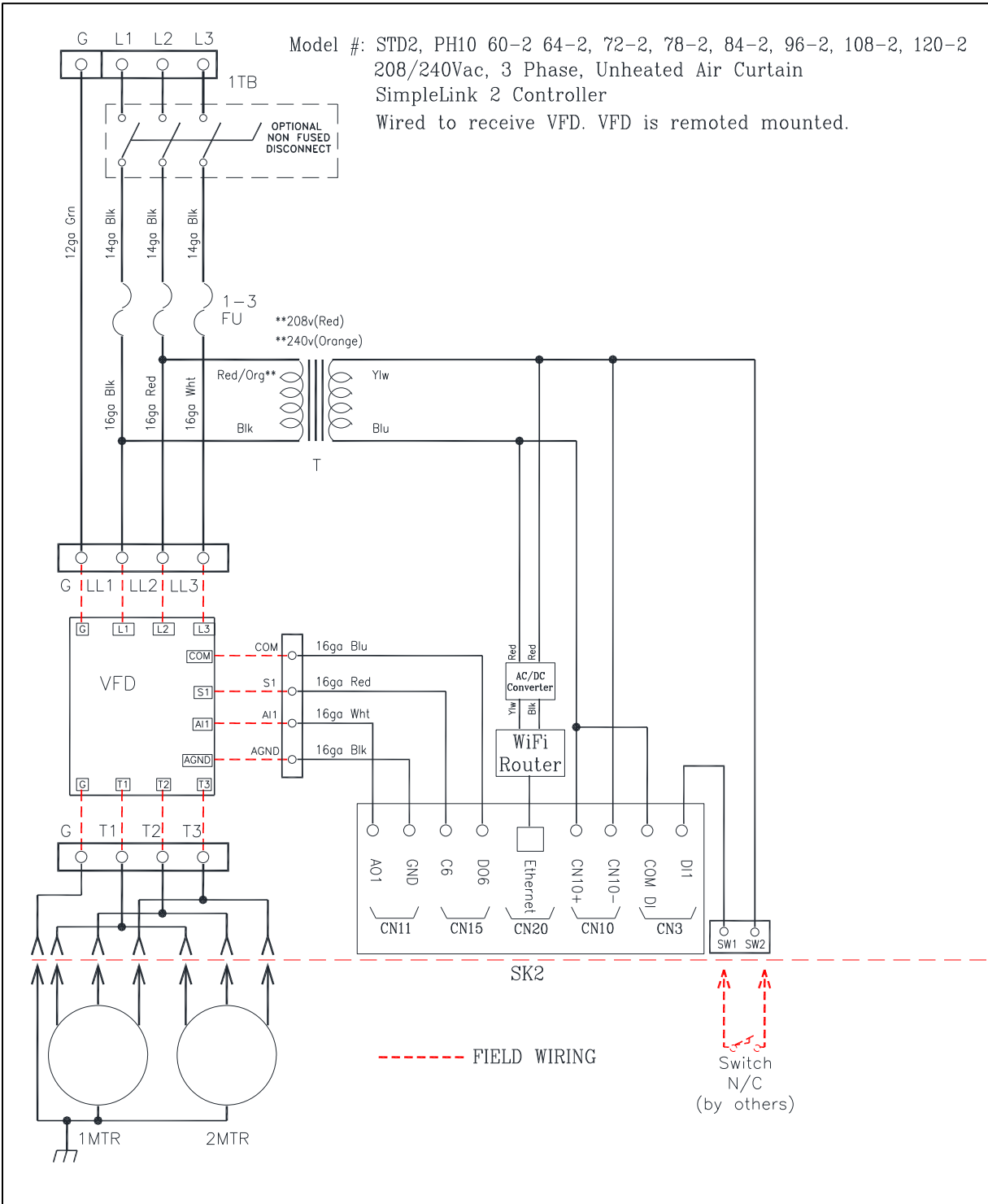
**MCPA-3UH-303**

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

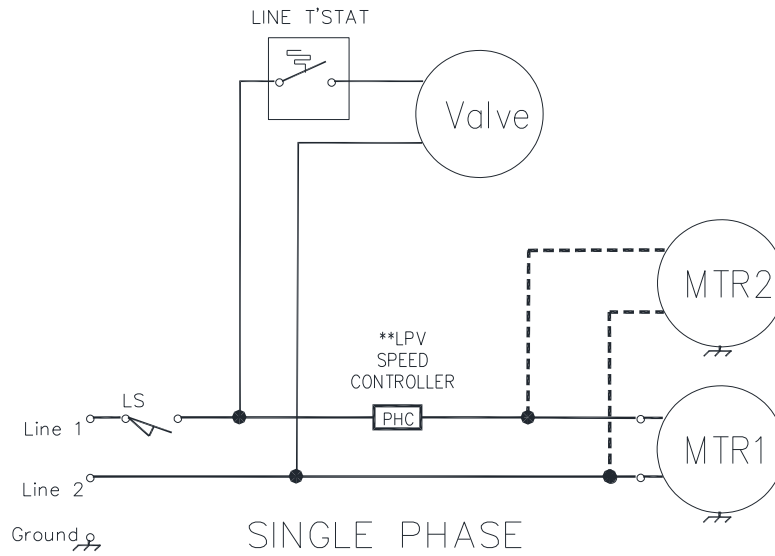


## SimpleLink 2 Controller with Remote VFD for STD2 (MCPA-2UG-SK2-VR)



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

### TYPICAL Hot Water/Steam HEATED DIAGRAMS



\*\*Speed Controller applicable only for LP series

#### 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

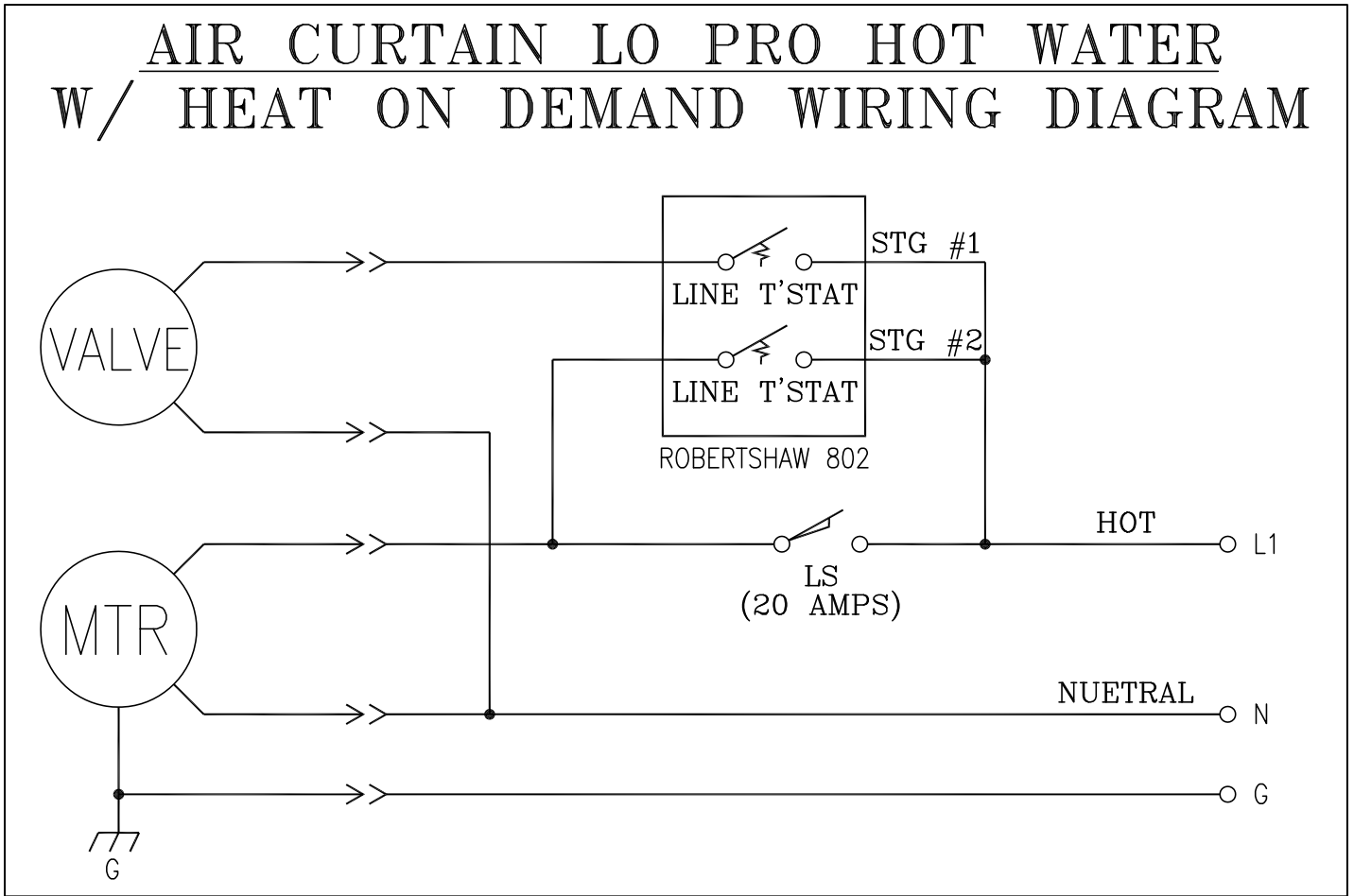
\*See Door Limit Switch submittal for additional switch info

### SYMBOLS

- 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)

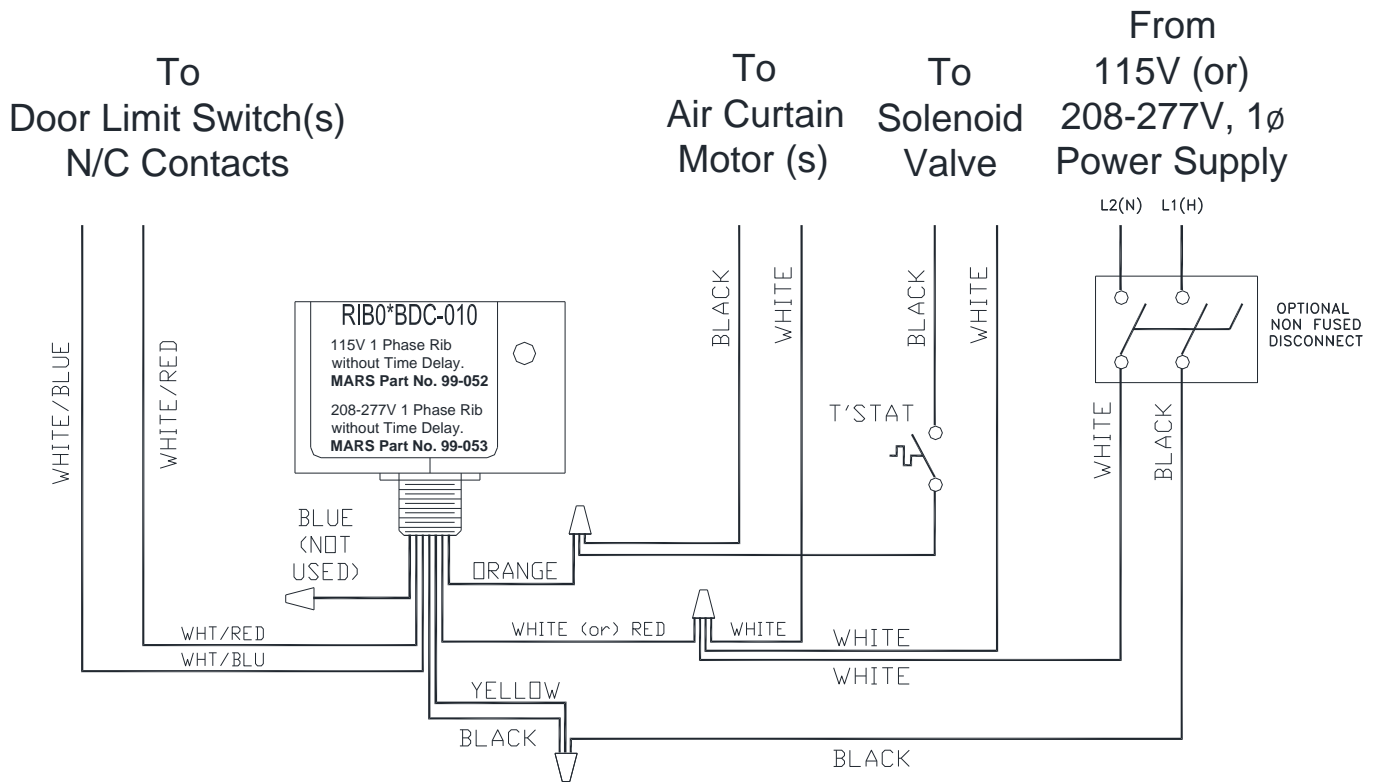
# AIR CURTAIN LO PRO HOT WATER W/ HEAT ON DEMAND WIRING DIAGRAM



## HW/S RIB ½ HP with No Time Delay

### RIB Kit Rating:

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



### RIB Kit Part Numbers:

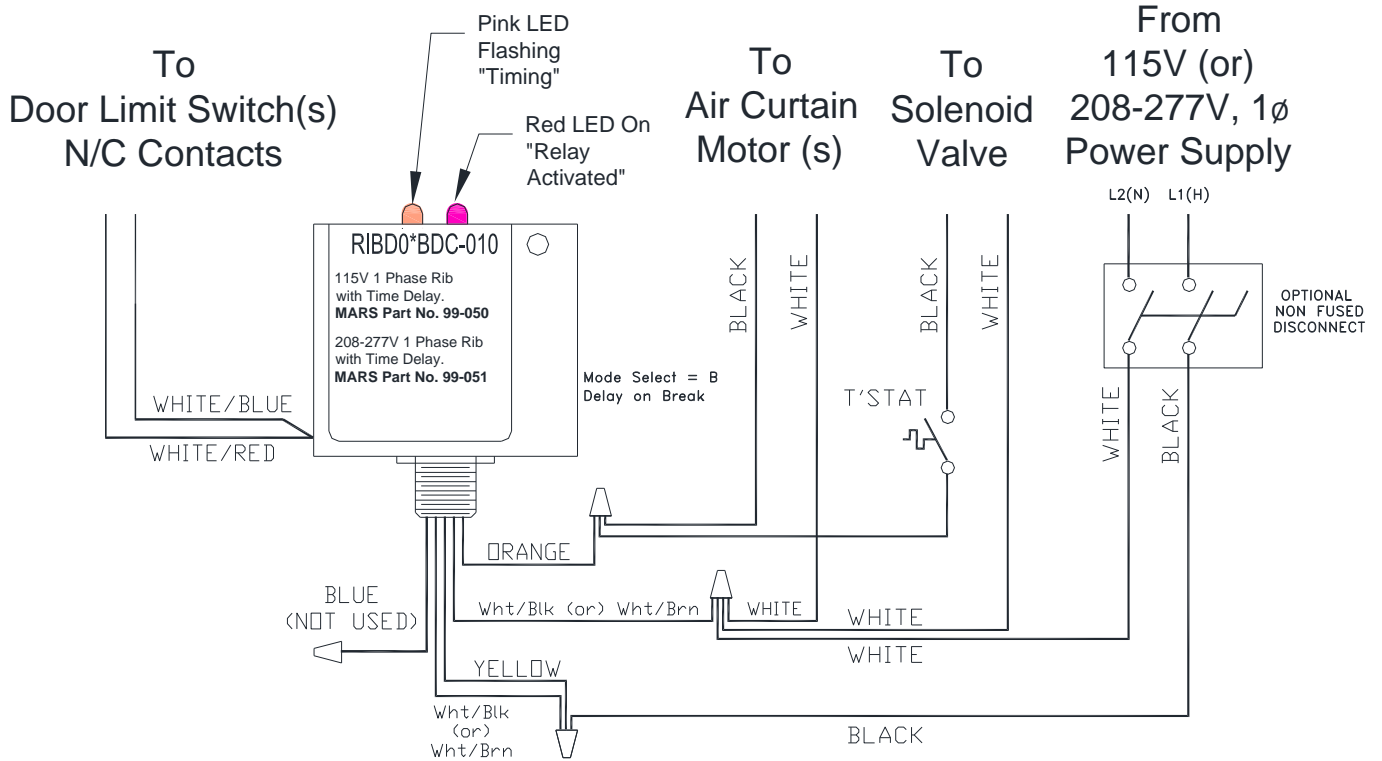
- 115v/1Ø
- J0023, J0036, J0100
- 208-230v/1Ø
- J0024, J0037, J0104

**Note:**  
The controllers are wired the same, but are not interchangeable.

## HW/S RIB ½ HP with Time Delay

### RIB Kit Rating:

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



### RIB Kit Part Numbers:

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

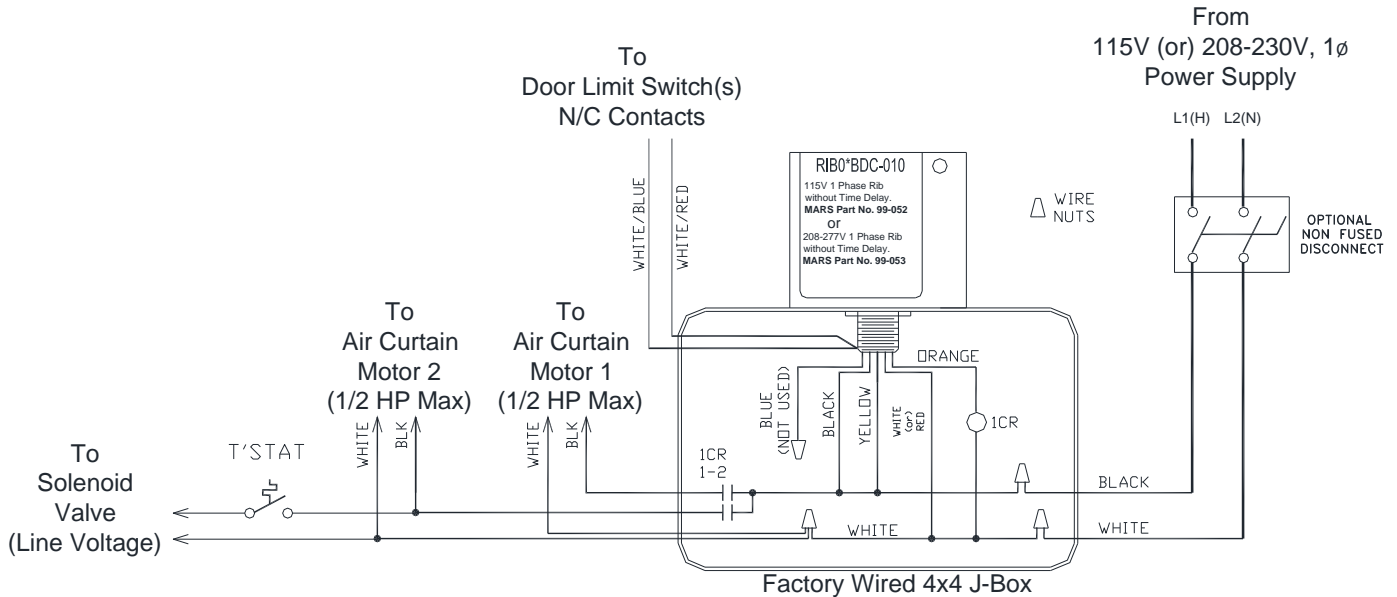
▽ WIRE NUTS

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

## HW/S RIB 1 HP with No Time Delay

### RIB Kit Rating:

- 115v or 208-230v
- 1 HP Max
- Hot Water/Steam Heat



### RIB Kit Part Numbers:

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

### Note:

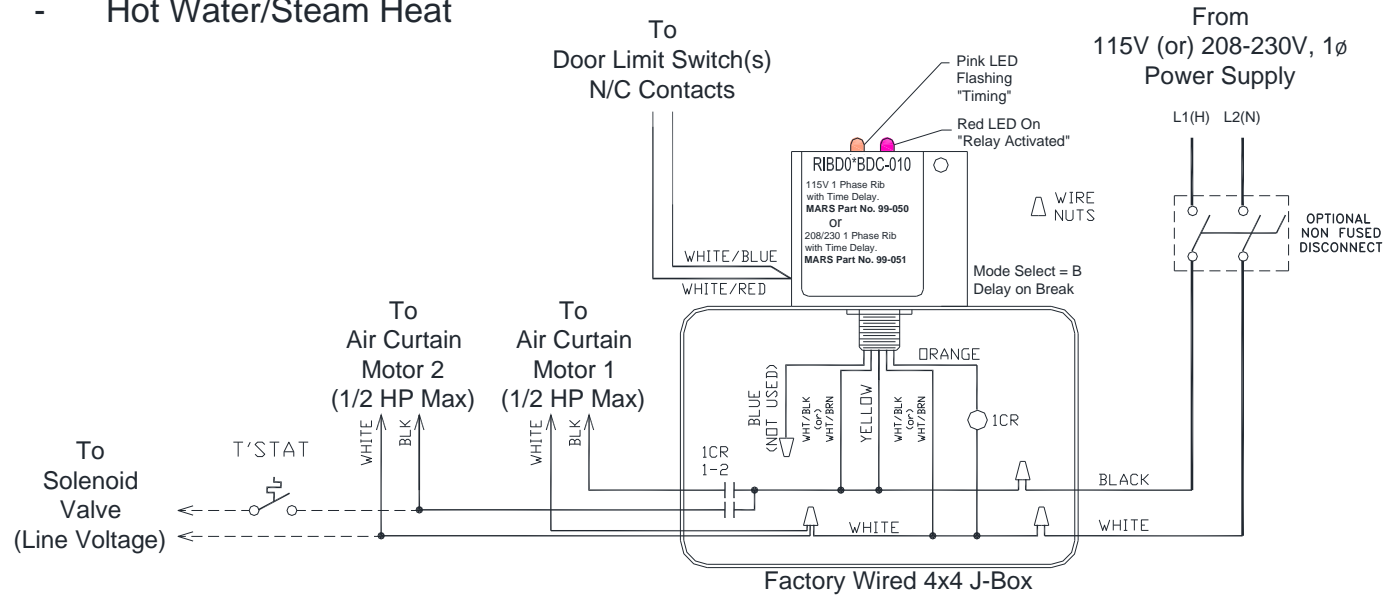
The controllers are wired the same, but are not interchangeable.



## HW/S RIB 1 HP with Time Delay

### RIB Kit Rating:

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



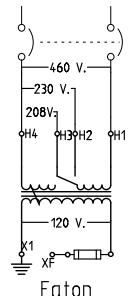
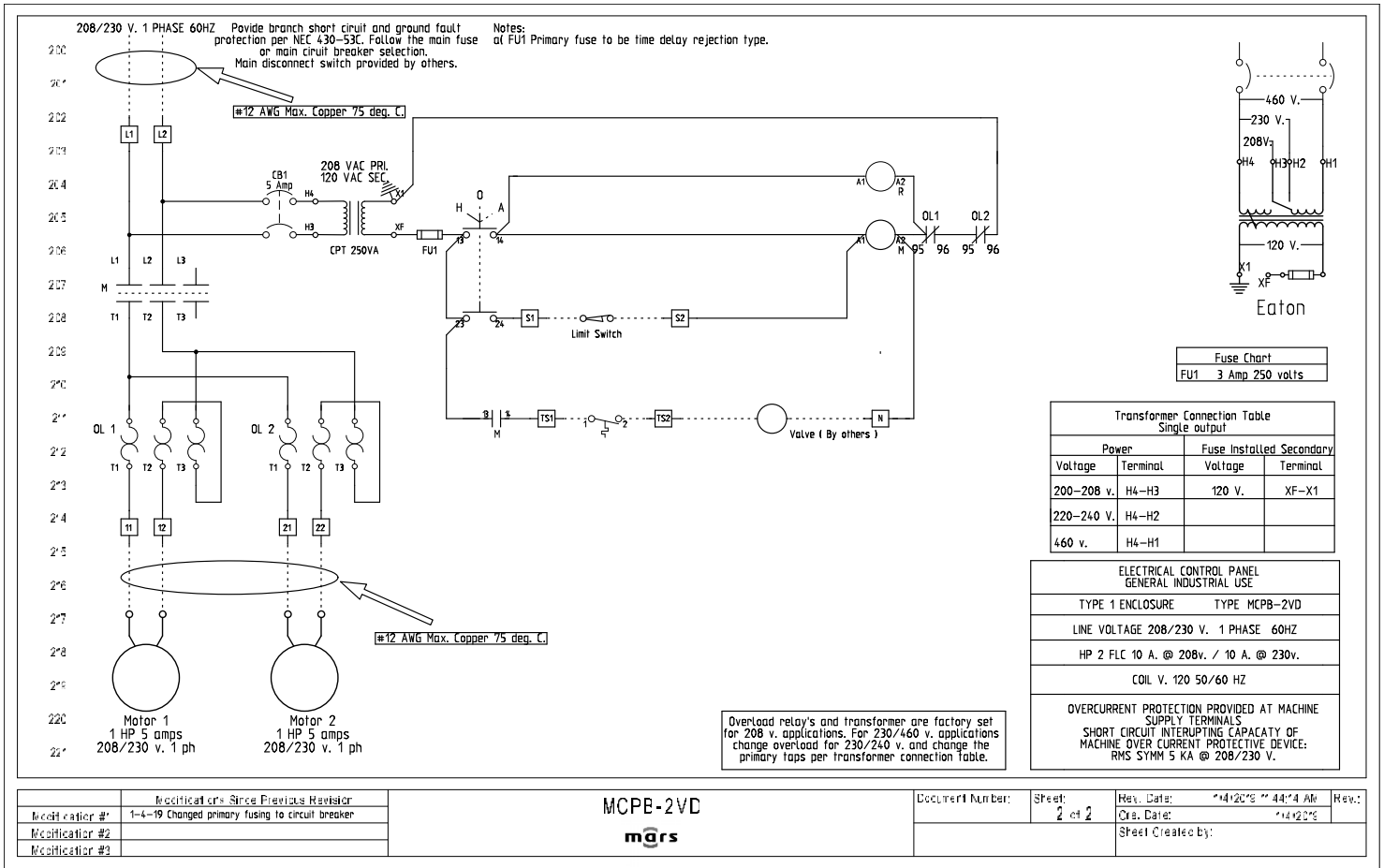
### RIB Kit Part Numbers:

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

### 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)



Fuse Chart	
FU1	3 Amp 250 volts

Transformer Connection Table Single output			
Power	Fuse Installed	Secondary	
Voltage	Terminal	Voltage	Terminal
200-208 v.	H4-H3	120 V.	XF-X1
220-240 V.	H4-H2		
460 v.	H4-H1		

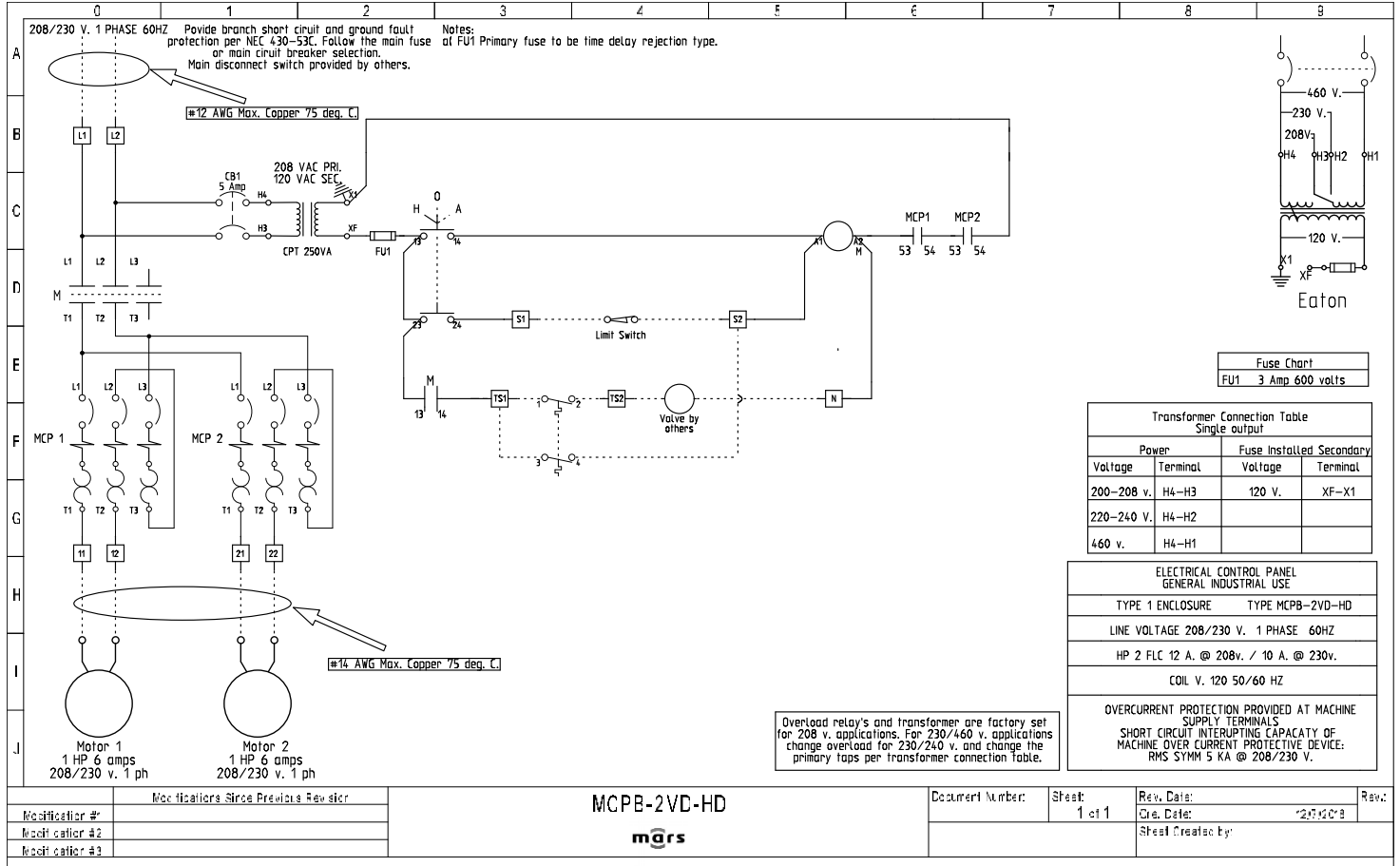
ELECTRICAL CONTROL PANEL GENERAL INDUSTRIAL USE	
TYPE 1 ENCLOSURE	TYPE MCPB-2VD
LINE VOLTAGE 208/230 V. 1 PHASE 60HZ	
HP 2 FLC 10 A. @ 208v. / 10 A. @ 230v.	
COIL V. 120 50/60 HZ	
OVERCURRENT PROTECTION PROVIDED AT MACHINE SUPPLY TERMINALS	
SHORT CIRCUIT INTERRUPTING CAPACITY OF MACHINE OVER CURRENT PROTECTIVE DEVICE: RMS SYMM 5 KA @ 208/230 V.	

Modifications Since Previous Revision	
Modification #1	1-4-19 Changed primary fusing to circuit breaker
Modification #2	
Modification #3	

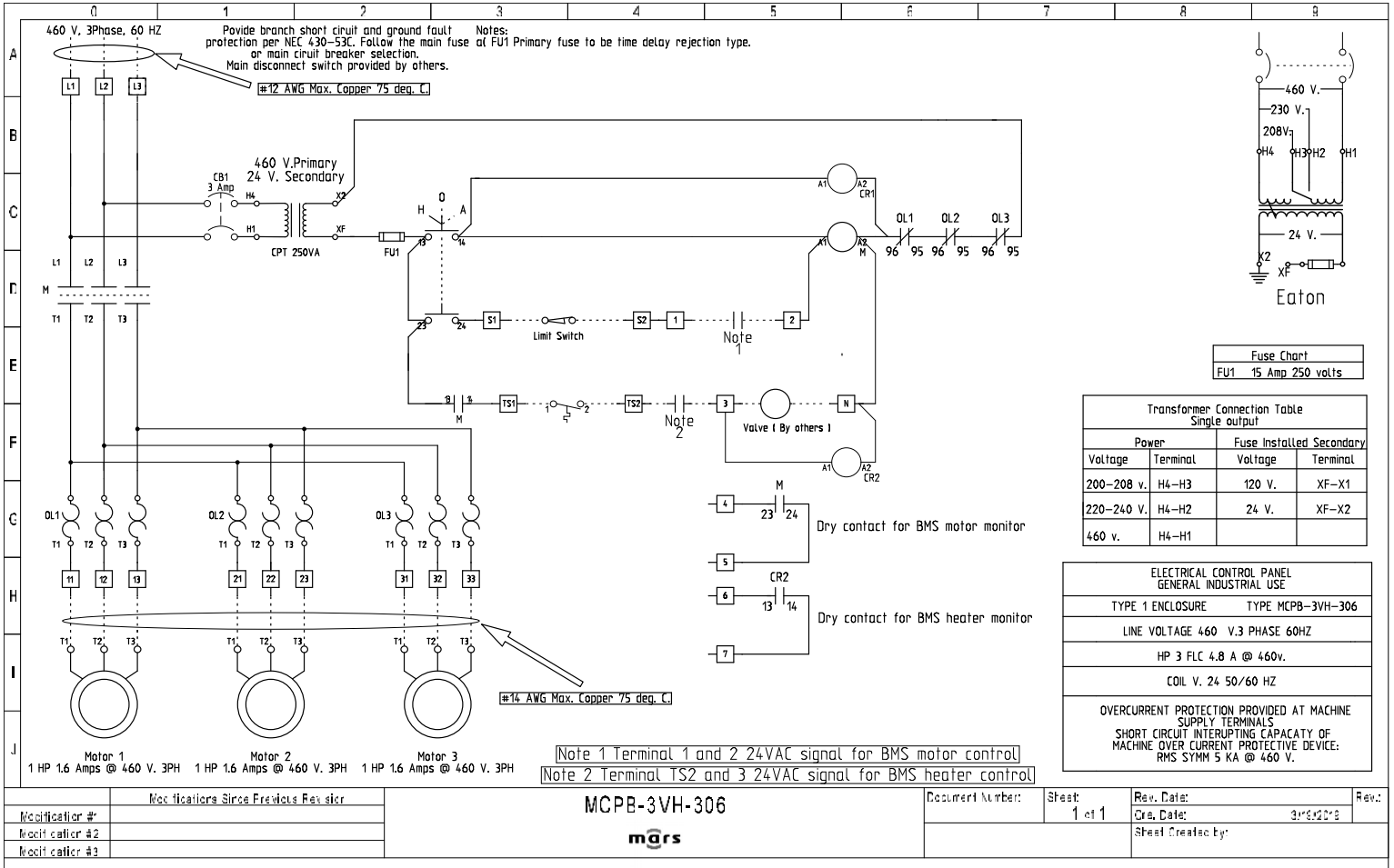
**MCPB-2VD**  
**mars**

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		Cre. Date: 11/12/2019	
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## 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)



Fuse Chart	
FU1	15 Amp 250 volts

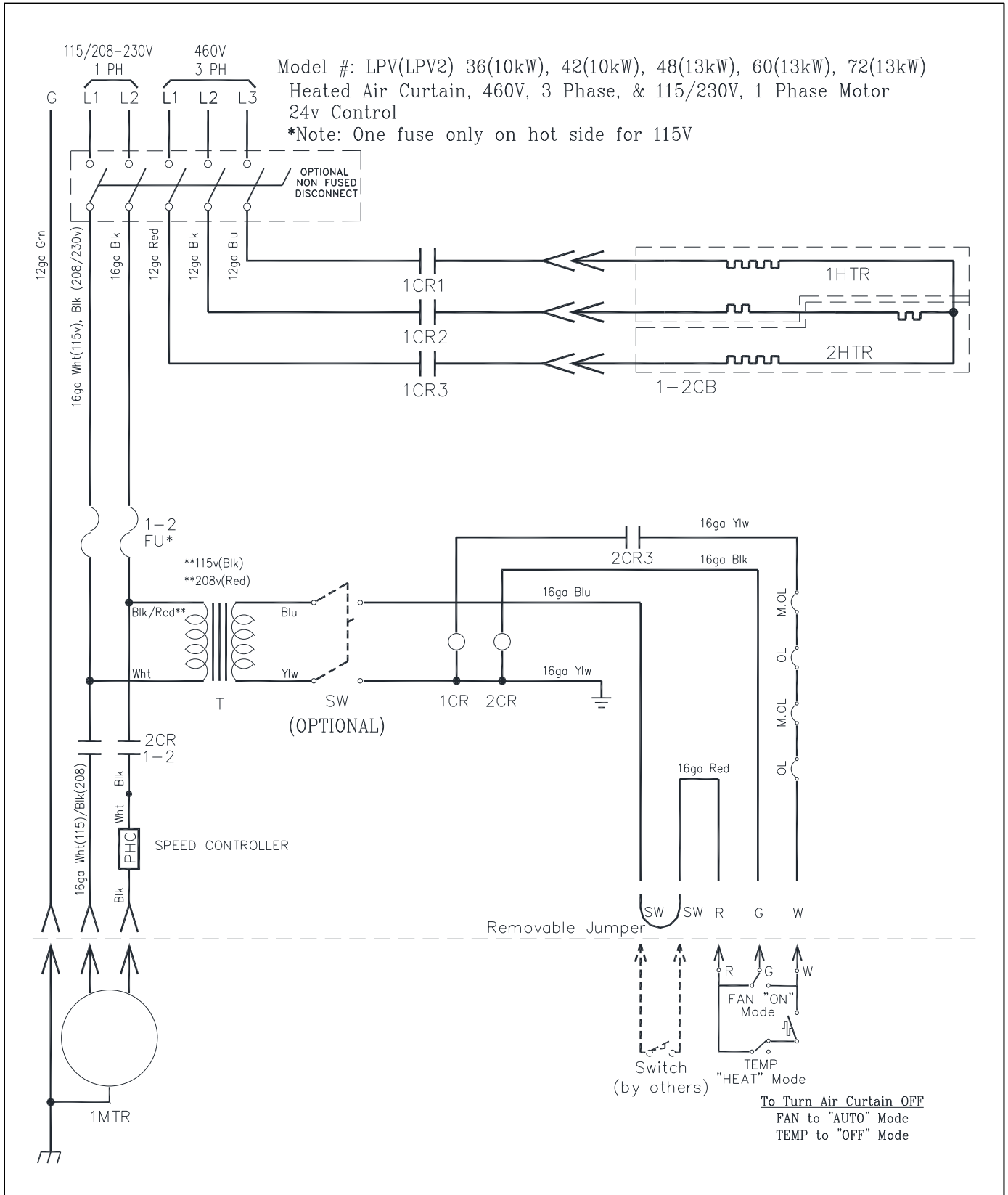
Transformer Connection Table Single output			
Power	Fuse Installed	Secondary	
Voltage	Terminal	Voltage	Terminal
200-208 v.	H4-H3	120 V.	XF-X1
220-240 V.	H4-H2	24 V.	XF-X2
460 v.	H4-H1		

ELECTRICAL CONTROL PANEL GENERAL INDUSTRIAL USE	
TYPE 1 ENCLOSURE	TYPE MCPB-3VH-306
LINE VOLTAGE 460 V.3 PHASE 60HZ	
HP 3 FLC 4.8 A @ 460v.	
COIL V. 24 50/60 HZ	
OVERCURRENT PROTECTION PROVIDED AT MACHINE SUPPLY TERMINALS	
SHORT CIRCUIT INTERRUPTING CAPACITY OF MACHINE OVER CURRENT PROTECTIVE DEVICE: RMS SYMM 5 KA @ 460 V.	

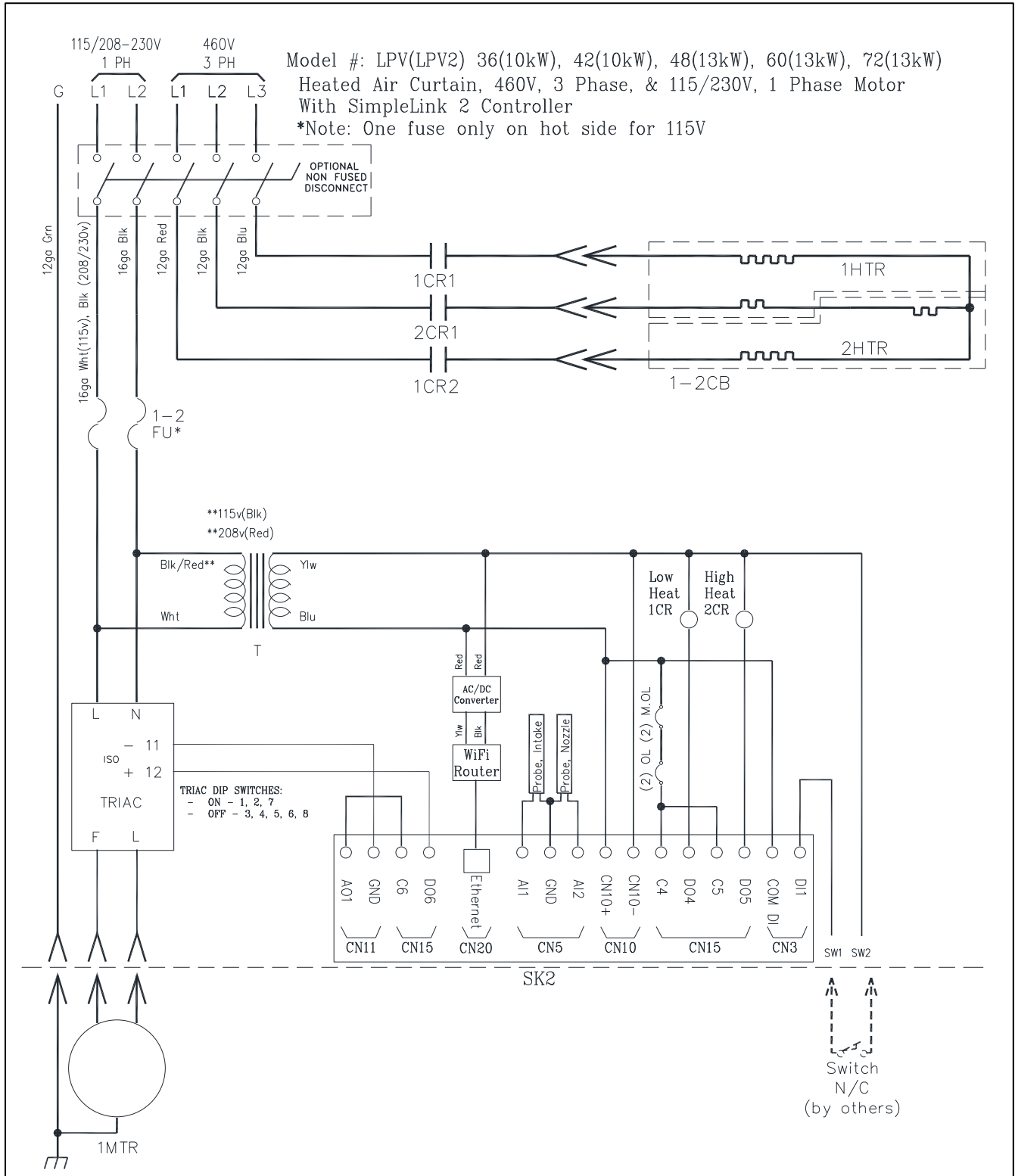
Modification #:	Modifications Since Previous Revision	<b>MCPB-3VH-306</b>	Document Number:	Sheet	1 of 1	Rev. Date:		Rev.:	
Modification #2						Cre. Date:	3/15/2018		
Modification #3						Sheet Created by:			



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



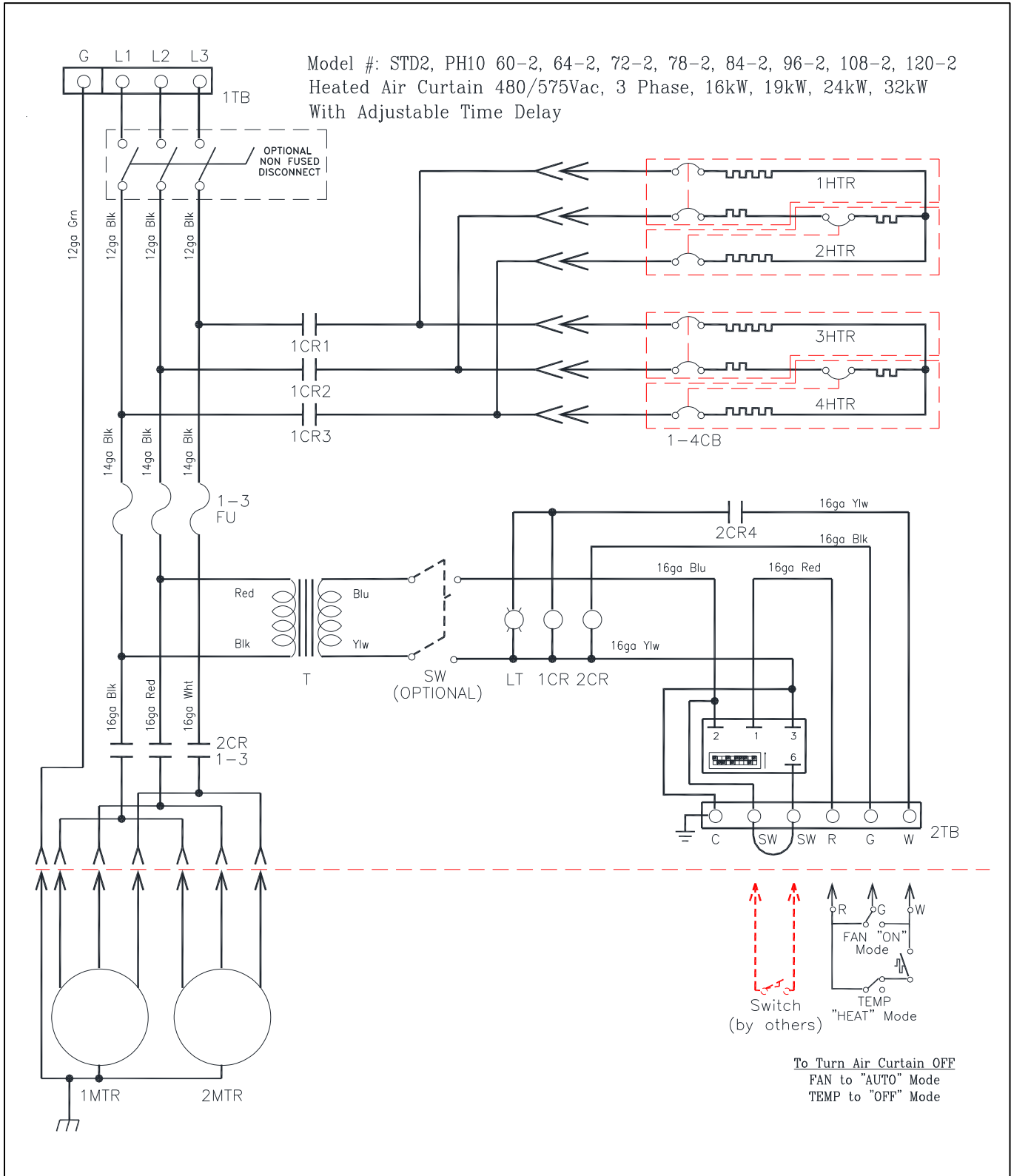
## Electric Heated LPV2, 1 Mtr, 460v/3ph Heater, 115v/1ph Motor, SimpleLink Controller







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



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

