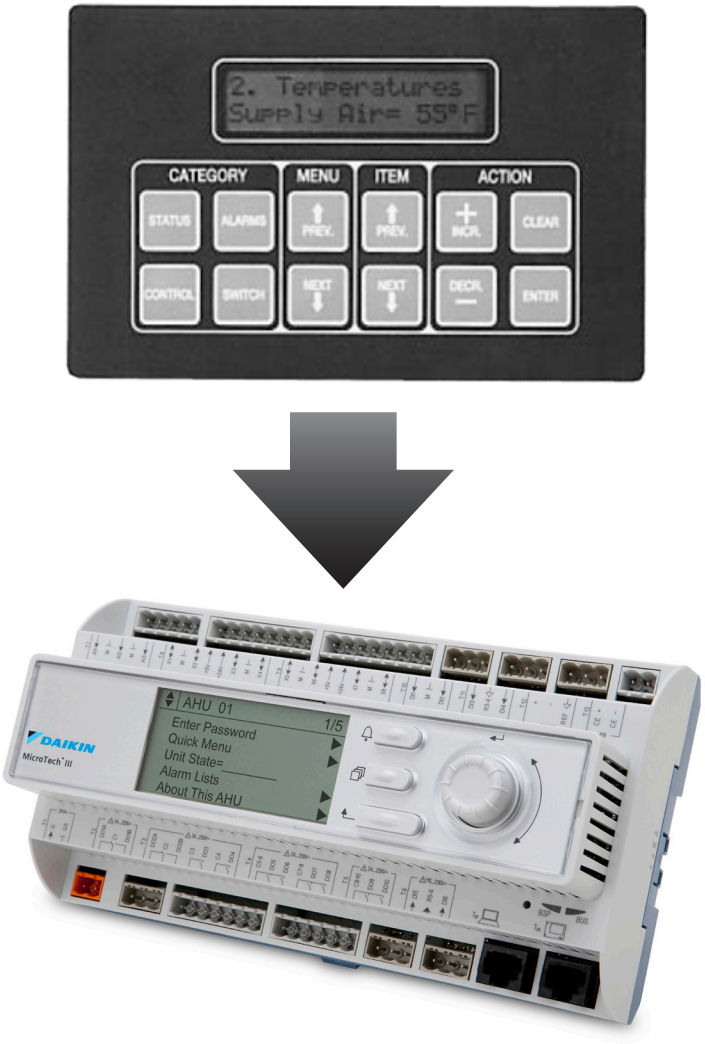
Installation and Maintenance

IM 1323-2

Group: **Applied Air Systems**
Part Number: **IM 1323**
Date: **January 2022**

Daikin Applied Rooftop Unit Controller

MicroTech® I to MicroTech® III Unit Controller Conversion



Warnings and Disclaimers

The following compiles a list of warnings and notes associated with the installation and operation of this kit. Make sure to follow these warnings, as well as always having properly trained technicians and electricians, or Daikin-authorized technicians perform work.

Hazardous Information Messages

⚠ CAUTION

Cautions indicate potentially hazardous situations, which can result in personal injury or equipment damage if not avoided.

⚠ WARNING

Warnings indicate potentially hazardous situations, which can result in property damage, severe personal injury, or death if not avoided.

⚠ DANGER

Dangers indicate a hazardous electrical situation which will result in death or serious injury if not avoided.

⚠ DANGER

Dangers indicate a hazardous gas situation which will result in death or serious injury if not avoided.

⚠ NOTICE

Notices give important information concerning a process, procedure, special handling or equipment attributes.

NOTE: This manual currently only supports the conversion of units with the following compressor configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage, 2-Compressor/6-Stage (includes unloaders), or 4-Compressor/8-Stage (includes unloaders). Review and confirm the compressor configuration of the unit before starting the control panel conversion.

Table 1: Parts Kit (300066935) Components

Description	Daikin Part Number	Quantity
Main Control Board - MTIII (MCB)	193407301	1
Expansion Module (EXP A,B, and C)	193407501	3
HMI Display	350147416	1
Controller Terminal Block – 2 pole	193410302	5
Controller Terminal Block – 3 pole	193410303	9
Controller Terminal Block – 5 pole	193410305	1
Controller Terminal Block – 6 pole	193410306	1
Controller Terminal Block – 7 pole	193410307	4
Controller Terminal Block – 8 pole	193410308	8
Terminal 2 × 2 spring Grey 2-row Jumper Ports	349930641	20
Terminal 2 × 2 Spring Green 2-row Jumper Ports (Ground)	349930647	5
Terminal Block End Stop Gray	874-144	10
Terminal Block End Plate Gray	349930741	10
Terminal Block Jumper – 2 Pole	349930942	3
Terminal Block Jumper – 3 Pole	349930943	3
Terminal Block Jumper – 4 Pole	349930944	3
Terminal Block Jumper – 5 Pole	349930945	10
Discharge Air Temperature Sensor (DAT)	193414602	1
Return Air Temperature Sensor (RAT)	332519704	1
Outside Air Temperature Sensor (OAT)	193414602	1
Sump Water Temperature Sensor	193414602	1
Sensor Plate	9101156960	2
Sensor Support	0497596010	2
Zone/Space Sensor w/ Tenant Override and Setpoint Adjust	910143408	1
Freezestat (FS1)	072502001	1
24 VAC, 0-10VDC Actuator (ACT 3)	113139501	1
24 VAC Relay Subbase	193413701	2
24 VAC Relays (OAER and R63)	193413601	2
115 VAC Relays (RPS1 and RPS2)	349934724	2
115 VAC Relay Subbase	349934822	2
DIN Rails (1 Meter)	349901938	2
White Wire Organizers 2” Depth	300044173	16
White Wire Organizers 2” Depth Cover	300044174	16
1 k ohm resistor for Freezestat	044690110	2
1.5k ohm resistor for frost protection	044690151	1
Connector Set for Extension	193409401	3
Separator	193414804	4

NOTE: Additional Parts Required

- Label Maker
- 18 AWG Wire
- Spade Connectors

Table 2: Optional Parts

The following parts are optional for the unit. Verify before starting conversion.

Description	Daikin Part Number	Quantity
Duct Static Pressure Sensor (SPS1)	910117462	1
Building Static Pressure Sensor (SPS2)	910117463	1
Entering Air Temperature Sensor	193414602	1
Leaving Air Temperature Sensor	193414602	1
Exhaust Air Temperature Sensor	193414602	1
Humidistat Sensor (units with frost protection)	910190890	1
Humidistat Sensor Support	910194091	1
Humidity Sensor, Duct mounted	910190890	1
Humidity Sensor, Wall mounted	067294901	1

Table 3: Network Communication Card

Choose a Network Communication Module from the list below, if required. A 10-pin connector will also be required when installing a Network Communication Module.

Communication Card Type	Part Number
BACnet MSTP	90016710
BACnet Lon CAV	90016711
BACnet IP	90016709
BAC Lon VAV	90016712
10 pin connector	300047027

Approximate Labor Hours

The MicroTech I to MicroTech III conversion process will require an estimated 32-48 hours of labor. The specified range of time required for completion is only to be used as a general guideline when preparing for the conversion process. Please note that the capabilities and experience of the service technician performing this work, as well as the individual jobsite conditions, could significantly affect the labor hour estimates.

Introduction

The purpose of this instruction manual is to guide a technician through the process of converting a MicroTech I (MicroTech I) control panel to a MicroTech III (MicroTech III) control panel on a Rooftop unit. The MicroTech III controller has an advanced navigation structure, improved metrics, trending data capability and network integration compatibility. Each Rooftop unit will have small differences, such as the compressor configuration or using a Variable Frequency Drive for the supply fan. Recognizing these differences and following the instructions throughout the manual will ensure a successful conversion.

NOTE: This manual currently only supports the conversion of units with the following compressor configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage, 2-Compressor/6-Stage (includes unloaders), or 4-Compressor/8-Stage (includes unloaders). Review and confirm the compressor configuration of the unit before starting the control panel conversion.

⚠ NOTICE

Follow all Lock-Out Tag-Out procedures to minimize risks of injury during this procedure. Always use proper rigging and lifting procedures! Always wear appropriate levels of PPE governed by the hazards which are present..

Labeling Wires

Figure 1 and Figure 2 show the typical control panel layout for different size units. Look for four types of electrical control boards mounted to the MicroTech I control panel: Main Control Board (MCB), Output Board(s), ADI Board, and Staging Board(s). See Figures 3, 4, 5, and 6 for images of the control boards. Reference IM 483 for more information on these boards. Before removing the boards, each of the wires connected to the boards must be labeled with a label maker. Refer to charts in Appendix I, Appendix J, and Appendix K for information on wiring and wire labeling. Labeling the wires will allow the technician to be more organized and rewire the control panel correctly once the MicroTech III is installed.

NOTE: The software program loaded in the MicroTech I controller influences the wiring options for each board. Find the specific software program information on the Software ID Tag located on the unit. Use the chart in Table 4 one to identify the software program on the unit. The “Program Tag” will allow the technician to follow the proper wiring chart found in Appendix I, Appendix J or Appendix K.

Table 4:

Program Tag	Software Part No.	Rooftop Unit Description
ART1	950164***	VAV, Cooling Only or Cooling/One-Stage Heat with Fan Tracking Control
ART2	950314***	VAV, Cooling Only or Cooling/One-Stage Heat with Building Static Control
ART3	950162***	VAV, Cooling/Modulating Heating with Fan Tracking Control
ART4	950313***	VAV, Cooling/Modulating Heating with Building Static Control
ART5	950163***	CAV, Zone Temperature Control (ZTC), Mixed Air or 100% Return Air
ART6	950315***	CAV, Discharge Temperature Control (DTC), Mixed Air or 100% Return Air
		VAV, Air Volume Modulation by Others
ART7	950166***	CAV, Zone Temperature Control (ZTC), 100% Outdoor Air
ART8	950316***	CAV, Discharge Temperature Control (DTC), 100% Outdoor Air

Figure 1: Typical MicroTech Control Panel Layout - 018C - 040C, 800C and 802C

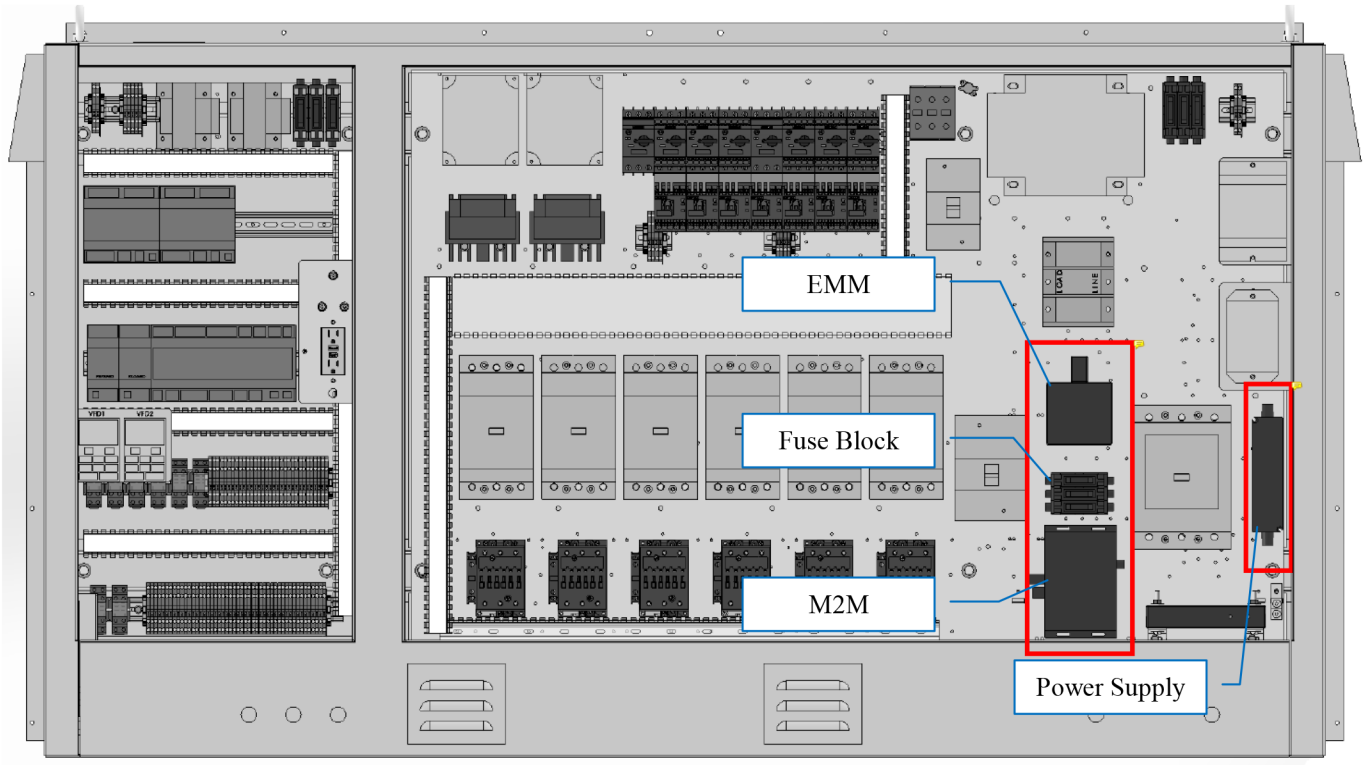


Figure 2: Typical MicroTech Control Panel Layout - 045C - 135C, 047C and 077C

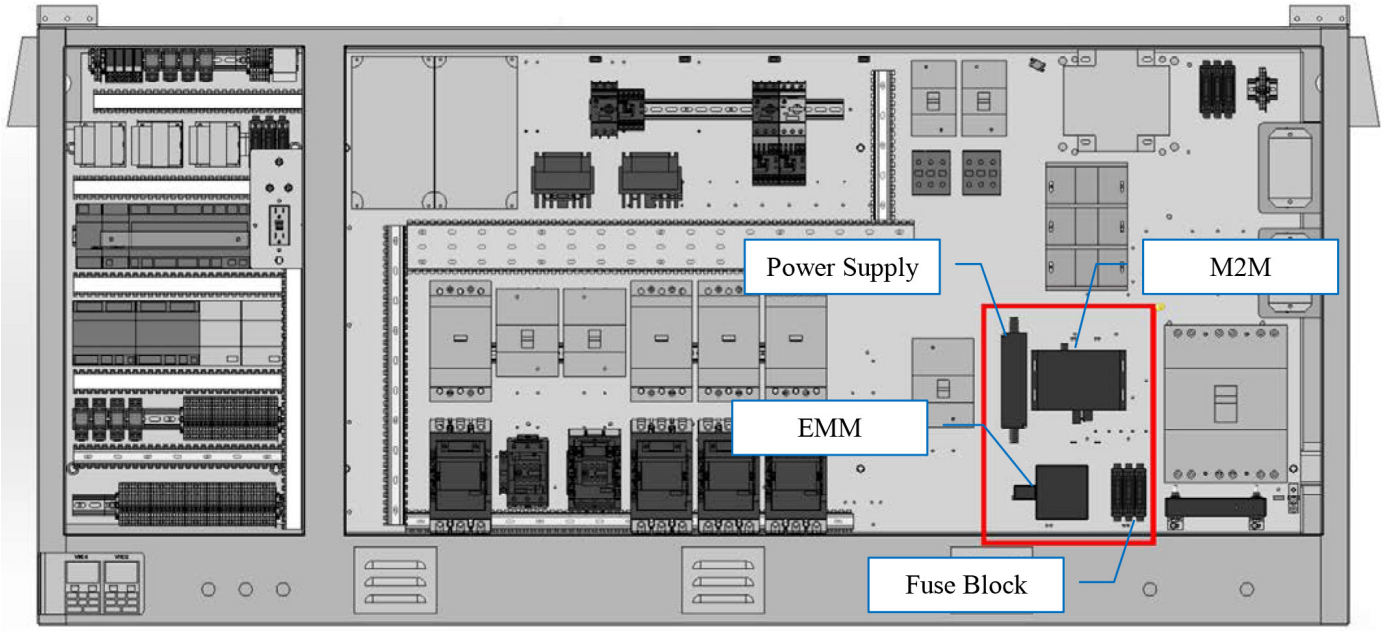


Figure 3: MCB

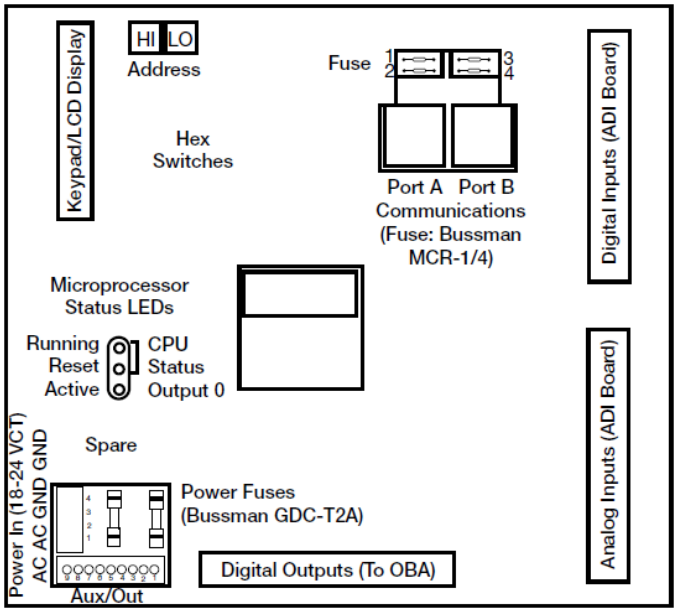


Figure 5:

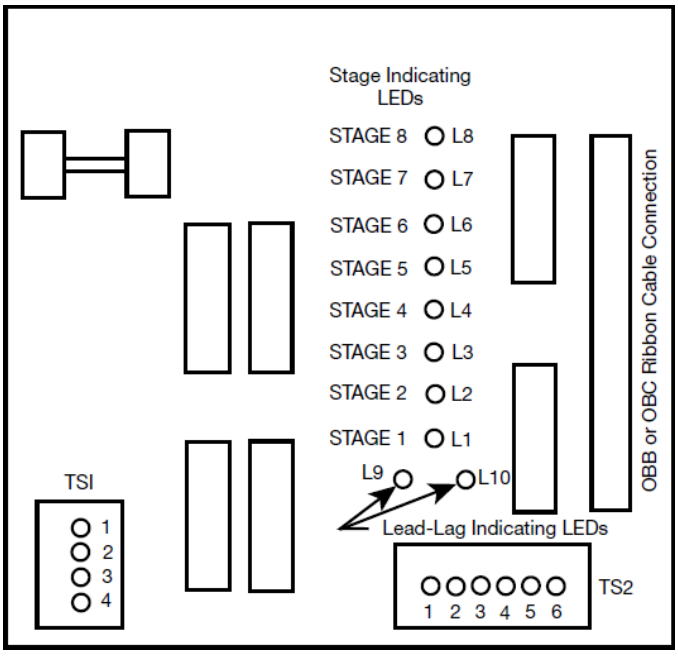


Figure 4:

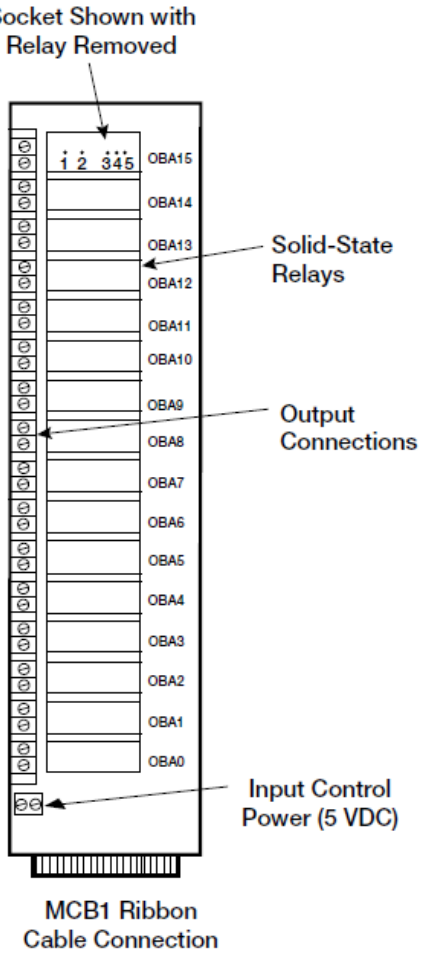
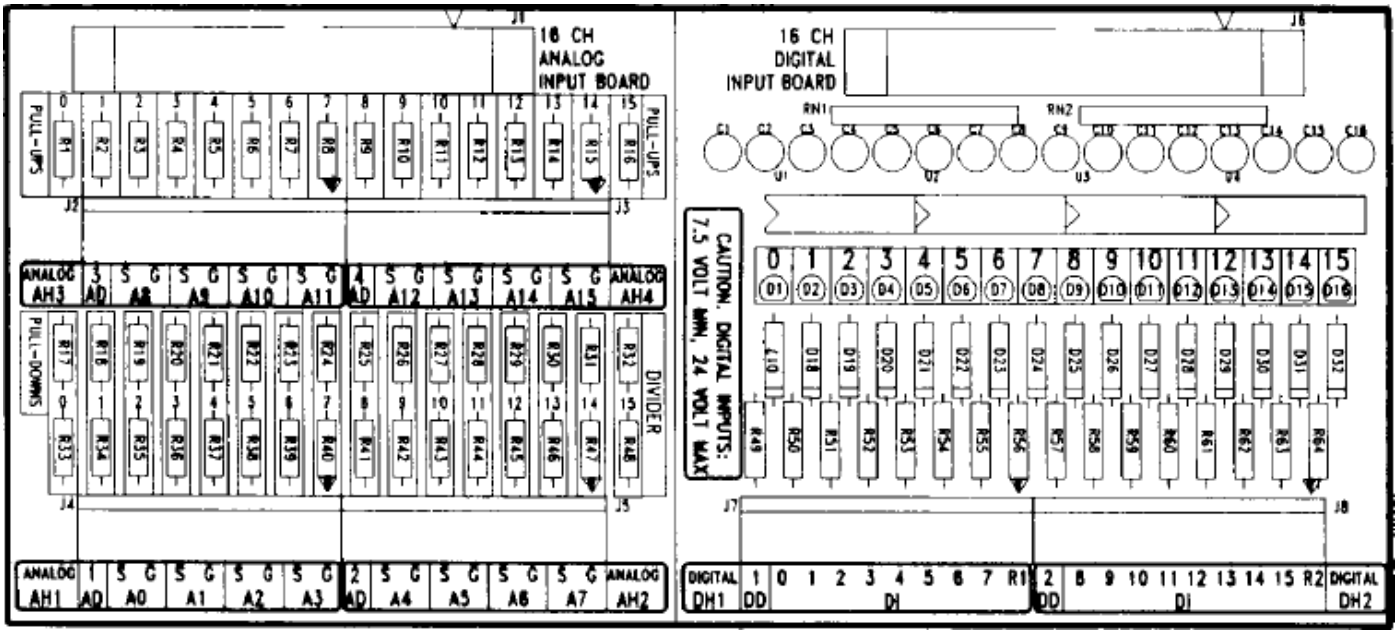


Figure 6: Output Board A (OBA) *Outboard Board B (OBB)*



MicroTech I Display and Board Removal

Once each of the wires are labeled, follow the directions below.

1. Unplug all wires from the Main Control Board, Output Boards, Staging Boards and ADI Board. Leave all paired wires in their respective plugs to keep them organized.
2. Unscrew each of the boards from the control panel.
3. Remove the wires from the back of the MicroTech I display.
4. Unscrew the display and remove from the control panel.

Removing Temperature Sensors, Pressure Sensors and Pressure Switches

The following temperature sensors will need to be removed from the unit: Zone/Space Sensor, DAT, RAT, OAT, EFT, EAT, LAT. Note down the mounting location for each of these sensors because new sensors will be remounted and wired to the MicroTech III Main Control Board later in this manual.

The PC5, PC7 and DHL do not need to be removed. The SPS1 (Duct Static Pressure) and SPS2 (Building Static Pressure) transducers need to be removed and will be replaced.

Replace tubing if necessary. Note down the high and low side of pressure designations to avoid erroneous readings after install.

Installing DIN Rails, MicroTech III Main Control Board, Expansion Modules, Relays, Terminal Blocks, and Wire Raceways

DIN Rails

Four to Six separate DIN rails are required to mount the MicroTech III, Expansion Modules, relays, terminal blocks and other components in the control panel. This kit includes a one-meter piece of DIN rail. Follow the directions below when installing the DIN rail(s).

1. Cut the DIN rail to length as needed.
2. Use a level to ensure the components will mount properly to each DIN Rail.
3. Screw through the DIN rail holes and into the control panel sheet metal backing.
4. Adjust DIN rails as needed because space is limited within the control panel.

NOTE: Use the image in Appendix H as a guide when laying out the components in the control panel.

MicroTech III and Expansion Modules

Follow the directions below when installing the MicroTech III and Expansion Modules.

1. Slide the MicroTech III Main Control Board onto the DIN rail and engage the tabs to secure it in place. Depending on the unit, one or more Expansion Modules may need to be connected to the MicroTech III Main Control Board.
2. If an Expansion Module is installed adjacent to the MicroTech III Main Control Board or other Expansion Module:
    a. Slide the 4-pin connector into the left side of the Expansion Module.
    b. Slide the other end into the right side of the MicroTech III Main Control Board or other Expansion Module. Multiple Expansion Modules can be mounted to the right of the prior module.
3. If the Expansion Module is not able to be installed next to the MicroTech III Main Control Board or other Expansion Module:
    a. Slide the 4-pin remote connector for the remote Expansion Modules into the left side of the Expansion Module.
    b. Wire the 4-conductor signal cable to the remote connector.
    c. Wire the other side of the cable to the second 4-pin remote connector.
    d. Slide the connector into the MicroTech III Main Control Board or other Expansion Module.
4. Once each of the Expansion Modules are installed, they must be addressed by setting the dip switches. In the lower right corner of an Expansion Module, there are six white switches with blue backing. Appendix A shows how these dip switches should be set, depending on the type of Expansion Board.

NOTE: The last Expansion Module must have the sixth dip switch in the “up” position. The sixth switch acts as an end-of-line resistor and stops the MicroTech III from looking for more Expansion Modules. See Appendix A for details.

Relays

The R63 relay is required to indicate when the DHL switch is open. The OAER Relay is required to indicate Outdoor Air Enthalpy Switch status. The RPS1 and RPS2 relays are required to indicate the PS1/PS2 switch status. Slide the necessary relays onto the DIN rail. Spacers can be used to separate the components on the DIN rail.

NOTE: If the unit does not have an Airside Economizer or one is not required, relay OAER Relay is not necessary.

Table 5: Unit Features

Unit Features	Expansion Module A	Expansion Module B	Expansion Module C
DesignFlow	X		
RelativeHumidity	X		
CO2 Sensor	X		
Dehumidification Reheat	X		
Compressorized Cooling	X		X
Enthalpy Wheel Bypass Dampers	X		
EAT	X		
LAT	X		
Duct Static Pressure		X	
CWV		X	
F&BP Dampers		X	
Gas Furnace Enable		X	
Heating Valve		X	
Staged Heating		X	

Terminal Blocks

The MicroTech I control panel consists of two types of terminals blocks: general wiring terminal blocks and power terminal blocks. The general wiring terminal blocks are used for circuit interconnections and the power terminal blocks are used for a source of 24 VAC or 115 VAC power. The MicroTech I control panel should already be set up for these types of terminal blocks. However, reconfiguring and organizing the terminal blocks may be necessary to support this conversion. Please see the Terminal Block Wiring section of this manual for more information.

Wire Raceways

The white wire raceways are designed to ensure an organized control panel. Mount the wire raceways as needed. Fasten wire raceways to the control panel with screws.

Installing Remote HMI Display

Install the optional Remote HMI Display on the control panel in place of the previous MicroTech I display. Mount the Remote HMI Display by using the magnets or screw terminals with anchors found on the back of the display. See IM-1005 for details on wiring.

Installing PC5, PC7, DHL Tubing and Duct Static Pressure Transducer

Install new tubing for the pressure switches, if necessary, and confirm that it matches the diagram in Figure 7. See Figure 9 for an example of PC5, PC7 and DHL pressure switches installed in the unit. If the unit has a Variable Frequency Drive and the supply fan is designed to operate based on Duct Static Pressure set point, a Duct Static Pressure transducer (DSP) will need to be installed. If there is a Duct Static Pressure transducer currently installed in the MicroTech I control panel, it will need to be replaced. The Duct Static Pressure transducer is installed by mounting it on a 6-inch piece of DIN rail. See Figure 8 below and Appendix H for control panel mounting location.

Figure 7: New DSP Tubing Diagram

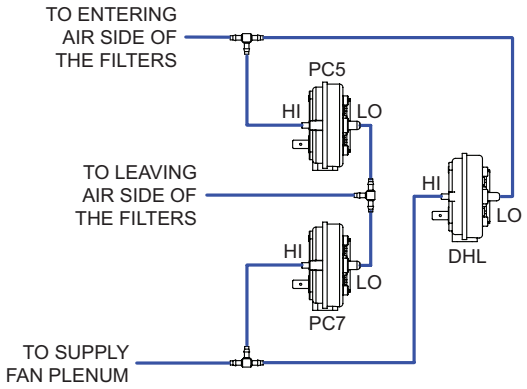


Figure 8: Duct Static Pressure (DSP) Transducer

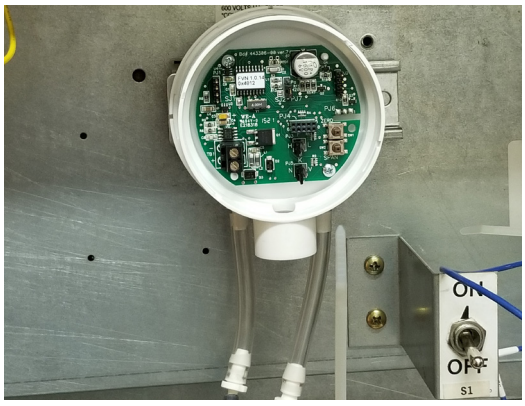
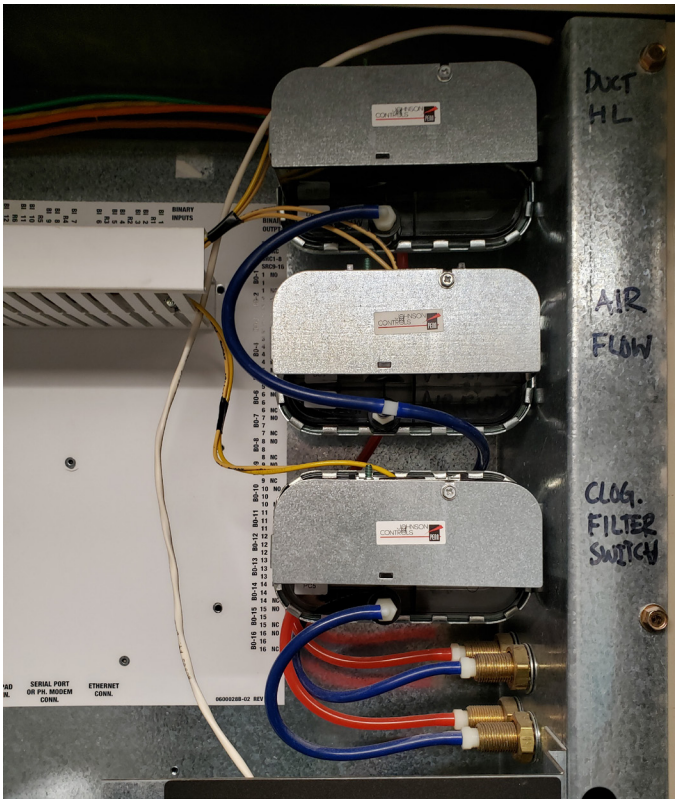


Figure 9:



Installing Freezestat

If the unit contains a hot water or steam coil, it will require a Freezestat. A non-averaging type Freezestat (FS1) is used to protect hydronic coils from subfreezing temperatures. The control is mounted on the entering face of the economizer coil. Upon sensing a temperature above specification, the unit shuts down, opens the hydronic control valves, and sends an alarm indication via the MicroTech III controller. The Freezestat has a field-adjustable set point range of 35°F to 45°F. To change the set point, turn the adjustment screw until the pointer is opposite the desired cutout point. The adjustment screw is accessible at the bottom of the Freezestat switch or at the top when the cover is removed.

Installing the Variable Frequency Drive

A unit designed for a Variable Air Volume Application will need a Variable Frequency Drive installed for desired operation. The Variable Frequency Drive can be mounted to the back of the control panel within the control cabinet. Figure 10 and Figure 11 show a Variable Frequency Drive being mounted on the outside of a control panel. These images can be used as a guide for general purposes.

NOTE: If the unit already contains a Variable Frequency Drive, it must be able to be commanded through Modbus in order to properly function with a MicroTech III controller. If the Variable Frequency Drive is not capable of communicating through Modbus, it will need to be replaced. Daikin only supports installing ABB (ACS320, ACH550, and ACH580), Schneider (ATV212) or Danfoss (FC102) Variable Frequency Drives within the MicroTech III control panel. The installation location of the Variable Frequency Drive is dependent on the technician. They must choose a location with proper ventilation to avoid overheating. An example of an ABB Variable Frequency Drive mounting is shown in Figures 10 and 11.

Figure 10: VFD

Figure 11: VFD

Wiring to the MicroTech III

⚠ NOTICE

Power must NOT be applied to the MicroTech III or other devices when wiring to the controller.

After the sensors, switches, relays, actuators, controllers and modules are installed, the wiring to the MicroTech III can begin. A full wiring diagram can be found in Appendix B. Use the wire raceways around the edges of the control panel to ensure neatness and terminate wires on the MicroTech III correctly. Terminating an energized wire on the incorrect terminal could open the internal MicroTech III fuse and effect the operation of the controller.

Wiring the Terminal Blocks and Transformers

Terminal Blocks

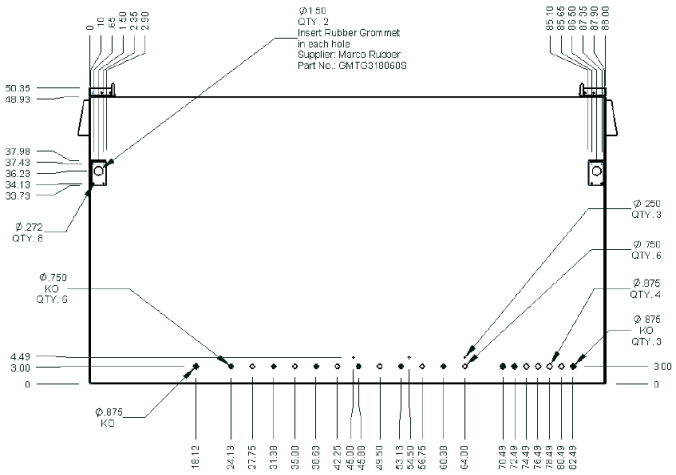
The MicroTech I should have multiple terminal blocks installed in the control panel. Most of the wiring in and out of the terminal blocks will not be adjusted. In order to keep the panel and wiring organized throughout this conversion, it is recommended that a separate set of terminal blocks be configured as shown in Figure 12.

When re-wiring the unit, there may be a need for two power terminal blocks, 24 VAC and 115 VAC, each designated for a specific voltage potential. The individual green terminal blocks can be used as ground/common for each separate voltage potential. Mechanical jumpers must be installed across each of the terminal blocks in order to create an equal potential through the block. The individual green terminal block pieces will be grounded to the unit's case through the DIN rail. Each side of Terminal Block 1 can source its power from the transformers in the unit. For example, the secondary of the 115 VAC to 24 VAC T2 transformer will be wired into the 24 VAC + and Common/Ground side of Terminal Block 1.

Terminal Block 3 will be a set of general terminal blocks used for general wiring of the unit. General wiring includes relay circuitry and high voltage component circuitry.

NOTE: Be cautious while setting up and wiring components to each terminal block. Some components only function with certain voltages.

Figure 12: Terminal Block 1 and Terminal Block 3



Transformers

Generally, the currently installed T1 transformer is a 480V/460V/230V/208V to 115V step down transformer and the currently installed T2 transformer is a 115V to 24V step down transformer. The secondary sides of the T1 and T2 transformers each consist of a positive (+) and a common potential. Wire the secondary of each transformer to the correct locations on Terminal Block 1 for general power wiring use.

Wiring Power to the MicroTech III MCB

The MicroTech III Main Control Board is powered by 24VAC from T2. On the Main Control Board, wire T1-G to 24 VAC + and T1-G0 to 24 VAC Common.

Wiring Temperature Sensors

Follow the directions below when wiring the temperature sensors to the MicroTech III.

1. Mount the Space/Zone sensor, DAT, RAT, OAT, EFT, EAT, LAT temperature sensors in the correct location.
2. Guide the wires for each sensor into the control panel.
3. Use the sensor plate and plastic sensor support when installing the DAT and RAT sensors.
4. Terminate the wires for each sensor as shown in the wiring diagram in Figures 13 and 14.

NOTE: The RAT sensor needs to be mounted far enough down the duct to avoid being influenced by the outside air temperature.

Figure 13: Sensor Wiring Diagram

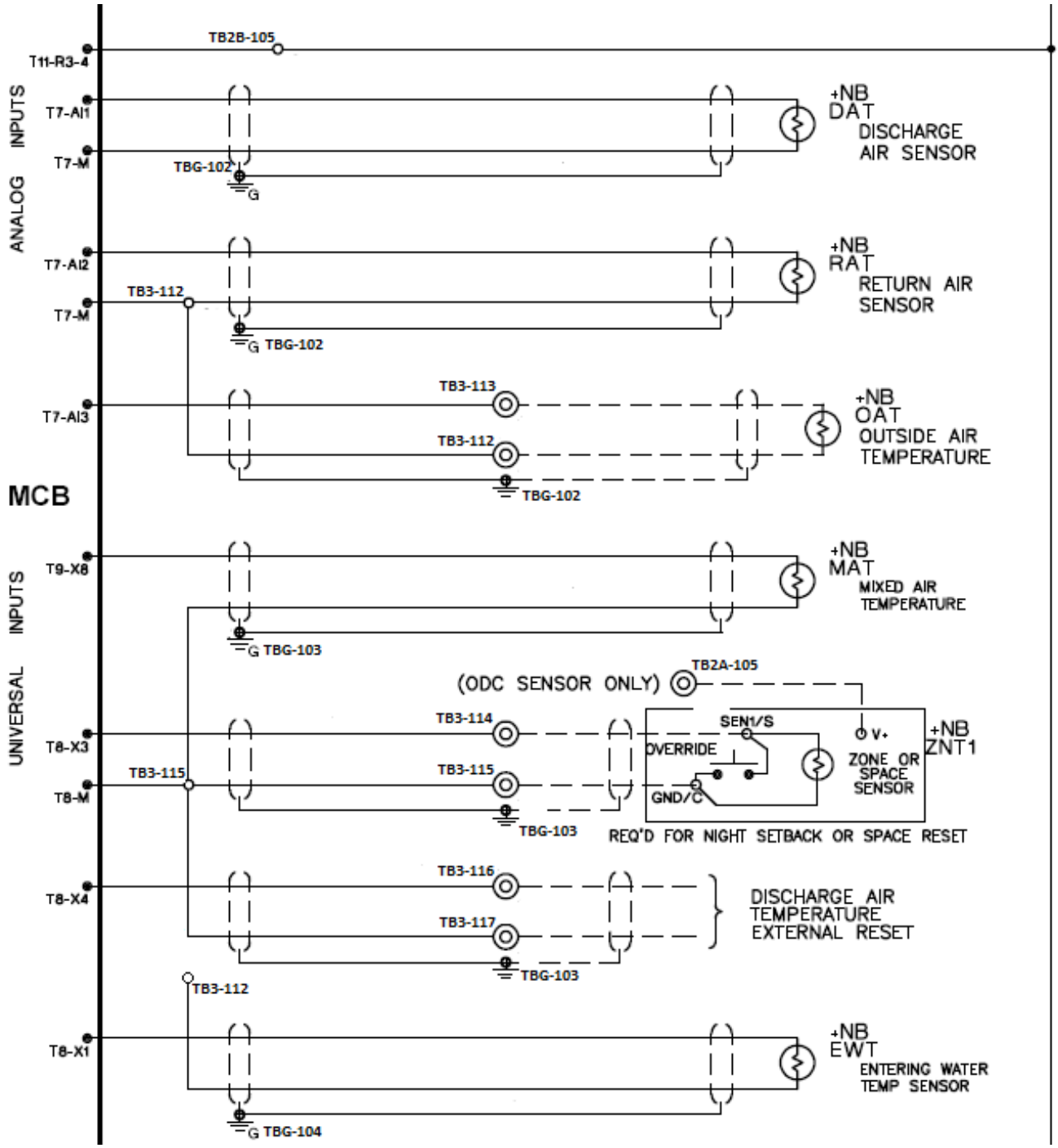


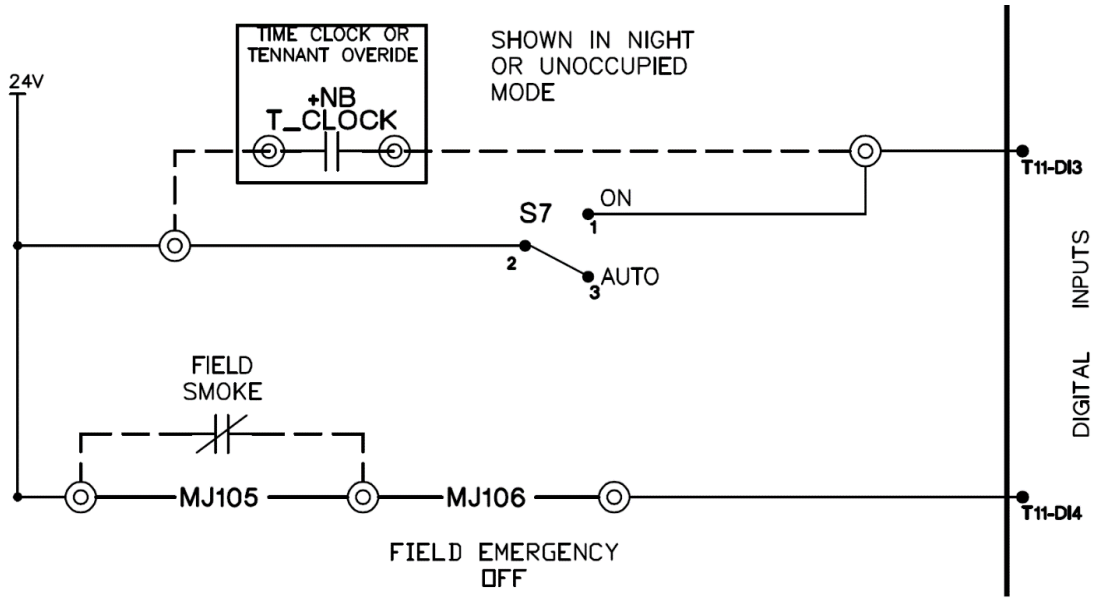
Figure 14: Sensor Wiring Diagram

Wiring the S7 Switch, Smoke/Emergency Off, and External Time Clock/Tenant Override

A power source of 24 VAC needs to be supplied to the S7 Switch and Tenant Override circuit. The S7 Switch and External Time Clock/Tenant Override are wired in parallel to the MCB-DI3. When MCB-DI3 receives 24 VAC, the unit will be commanded into Occupied Mode. Wire the S7 Switch and External Time Clock/Tenant Override contacts (if applicable) as shown in Figure 15. A power source of 24 VAC needs to be supplied to MCB-DI4 to allow the unit to run without an Emergency Off Fault alarm. The set of NC smoke detector contacts can be wired in series to MCB-DI4 as shown in Figure 15. When there is smoke detected, the NC contacts will open and 24 VAC will be removed from MCB-DI4 and cause an alarm.

NOTE: If the unit was selected for constant volume, then no DHL would be installed.

Figure 15: S7 Switch, Smoke/Emergency Off, and External Time Clock



Wiring Fan Operation, VAV Box Signal and Remote Alarm Output Circuits

MCB-DO10 output can be configured through the MicroTech III keypad for Fan Operation or VAV Box Output. If DO10 is configured for Fan Operation, the output is ON when the unit is not OFF or when both the unit is OFF and airflow is detected. It is OFF when the unit is OFF and airflow is not detected.

If DO10 is configured for VAV Box output, the VAV Output is turned OFF in the Heating state to indicate that hot air, instead of cool air, is being supplied to the VAV boxes. This output is also OFF when the unit is in the Startup or Recirculation states. When the Unit State is OFF, the VAV Box Output is in the Cool (ON) position unless airflow is detected. When airflow is detected, it switches to the Heat (OFF) position. Refer to Figure 16 for wiring.

The MCB-DO9 output can be used for a Remote Alarm Signal output. It indicates the alarm group that contains the highest priority active alarm. MCB-DO9 is ON when no alarms are active. For each individual alarm group (Warnings, Problems, or Faults), MCB-DO9 can be configured for the following actions: ON, Fast Blink, Slow Blink, or OFF. These can be configured via the Alarm Out Config menu in the Commission Unit >> Unit Set-up menu. The default values for the three groups of alarms are:

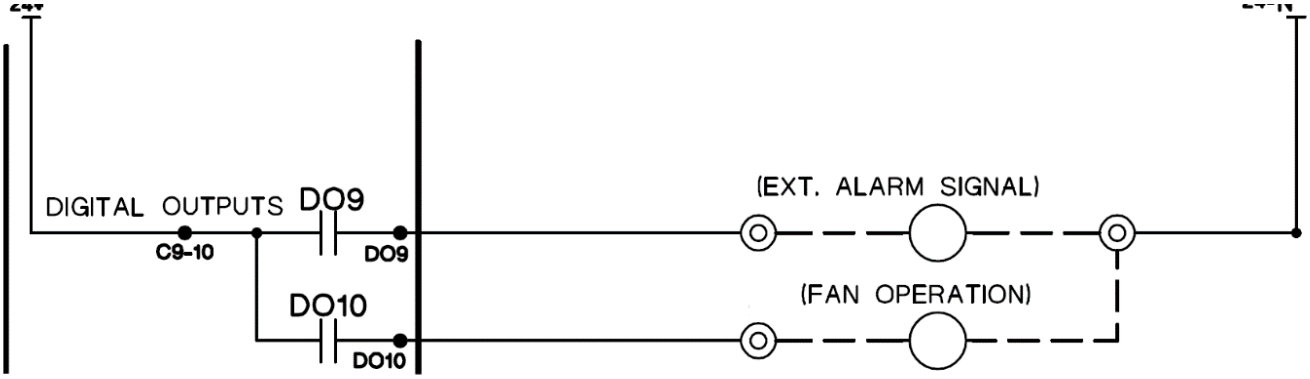
Warnings - OFF

Problems - Slow Blink

Faults - Fast Blink

24 VAC needs to be supplied to MCB-DO9 and MCB-DO10. See Figure 16 for wiring.

Figure 16:



Wiring Pressure Switches (PC5, PC7 and DHL) and R63 Relay

The PC5 pressure switch wires directly to the MicroTech III as shown in Figure 17. PC5 is a normally closed switch that completes a circuit between DI2 and M. If the switch opens, the circuit breaks and generates a dirty filter alarm.

The PC7 pressure switch is wired in series with the R63 NO contact and MicroTech III shown in Figure 17. PC7 is a normally closed switch that completes a circuit between DI1 and M. If the switch opens, the circuit breaks and an Airflow Fault alarm will occur after three fan restart attempts.

The DHL switch is wired in series with the R63 relay shown in Figure 18. The R63 relay is energized with 24 VAC from Terminal Block 1 as long as the DHL switch is closed. Two sets of NO dry contacts from the R63 relay are wired to the MicroTech III in DI1 and DI4 circuits and one set is wired into the Variable Frequency Drive.

NOTE: If the unit was selected for constant volume, then no DHL switch will be present.

Figure 17:

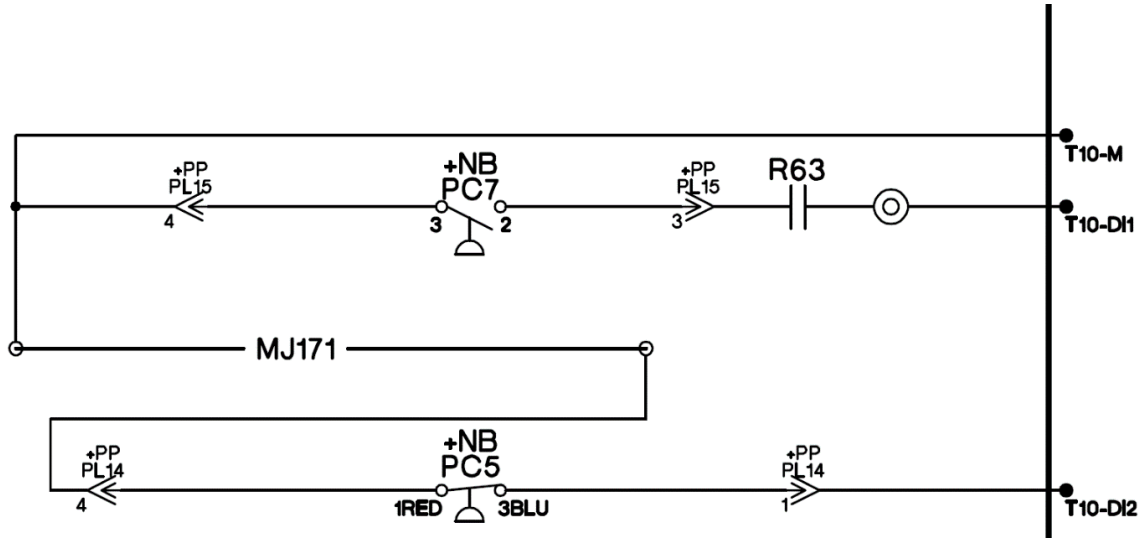
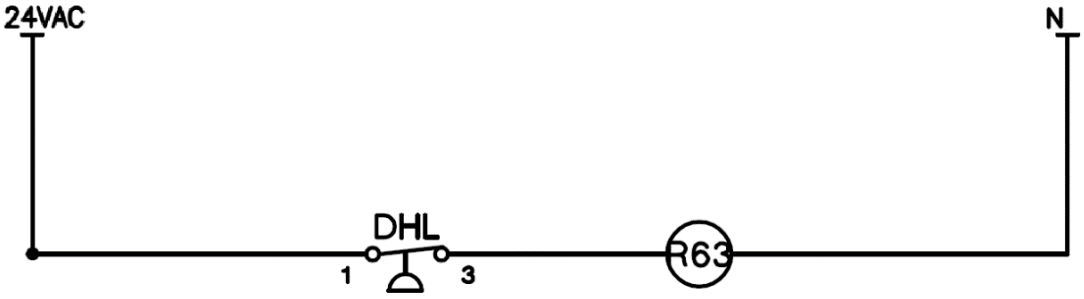


Figure 18:



Compressor Section Wiring

There are five compressor configurations supported through this conversion manual: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage, 2-Compressor/6-Stage, and 4-Compressor/8-Stage. The MicroTech III controller will not support other compressor configurations.

NOTE: See Figures 19 through 24 for wiring information related to this section. Figures 19 through 21 show the general representation of the MicroTech III wiring schematic. Figures 22 through 24 show the wiring additions to the MicroTech I wiring schematic. In this conversion, the compressor section re-wiring consists of replacing MicroTech I Binary Outputs with MicroTech III Digital Outputs. Reviewing each set of schematics before beginning the compressor section wiring will ensure a successful conversion. See Appendix I, Appendix J, and Appendix K for more information on wiring locations.

Fixed Speed, Scroll Compressor Configurations

Compressor configurations 2-Compressor/2-Stage, 4-Compressor/4-Stage, and 6-Compressor/6-Stage will include only fixed speed, scroll compressors. The MicroTech I control panel Digital Outputs (OBAs or OBBs) used to enable each compressor will be rewired to MicroTech III Main Control Board or Expansion Module A Digital Outputs. Each fixed speed, scroll compressor is enabled or disabled through a Digital Output on the MicroTech III Main Control Board or Expansion Module A.

Compressors 1-4 will be controlled through Digital Outputs 1-4 on the Main Control Board and Compressors 5-6 will be controlled through Digital Outputs 1-2 on Expansion Module A. The control of the condenser fans and solenoid valves are integrated into the current MicroTech I control panel wiring. Therefore, there are no wiring adjustments that need to be made for these components.

The low- and high-pressure switches will need to be rewired. The wiring changes are described in the next section of this manual. See Appendix I, Appendix J, and Appendix K for more information on wiring locations.

Reciprocating Compressor with Unloader Configurations

Compressor configurations 2-Compressor/6-Stage and 4-Compressor/8-Stage will include fixed speed, scroll compressors and reciprocating compressors with unloaders. The MicroTech I control panel Digital Outputs (OBAs or OBBs) used to enable each compressor/unloader will be rewired to MicroTech III Main Control Board or Expansion Module C Digital Outputs.

Each fixed speed, scroll compressor is enabled or disabled through a Digital Output on the MicroTech III Main Control Board or Expansion Module C. The control of the condenser fans and solenoid valves are integrated into the current MicroTech I control panel wiring. Therefore, there are no wiring adjustments that need to be made for these components. See Appendix I, Appendix J, and Appendix K for more information on wiring locations.

NOTE: In order to support the MicroTech I to MicroTech III control panel conversion for units with reciprocating compressors with unloaders, the MicroTech III will need to be configured as an RPE (Evaporative Condenser) unit to allow pump down logic. This specific configuration is set through the Compressorized Cooling Configuration option in the MicroTech III Unit Configuration. The details of this configuration are described in the “Programming the MicroTech III” section of this manual.

NOTE: When a MicroTech III is configured as an RPE unit, the controller expects valid inputs for the Sump Water Temperature and the Sump Water Level Switch. A 10k thermistor must be wired into Expansion Module C–X3 and M for the Sump Water Temperature. A jumper must be installed between Expansion Module C–X8 and M for the Sump Water Level Switch. These two wiring components are necessary to allow for proper unit operation for units with reciprocating compressors and unloaders.

Wiring Low Power Switches 1/2 and Resistors

Fixed Speed, Scroll Compressor Configurations

In units containing fixed speed, scroll compressor configurations, the low pressure switches for each circuit needs to be rewired. The X2 input on the MicroTech III Main Control Board will read a resistance value input depending on which switches are open. Figure 19 shows the MicroTech III wiring for LP1 and LP2. See Appendix I, Appendix J, and Appendix K for more information on wiring locations. Follow the directions below when rewiring the low pressure switches.

1. Replace Low Pressure 1 (LP1) and Low Pressure 2 (LP2) switches with jumper wires for each circuit. See Figure 22.
2. For circuit number one, the LP1 switch is rewired in series with a 1.5kΩ resistor to MCB-X2.
3. For circuit number two, the LP2 switch is rewired in series with a 1kΩ resistor to MCB-X2.

Reciprocating Compressor with Unloader Configurations

In units containing a compressor configuration of 2-Compressor/6-Stage or 4-Compressor/8-Stage, the low pressure switches for each circuit needs to be rewired. Figure 16-2 and Figures 20 and 21 show the MicroTech III wiring for LP1 and LP2. See Appendix I, Appendix J, and Appendix K for more information on wiring locations. Follow the directions below when rewiring the low pressure switches.

1. Replace Low Pressure 1 (LP1) and Low Pressure 2 (LP2) switches with jumper wires for each circuit. See Figures 23 and 24.
2. For circuit number one, the LP1 switch is rewired to EXPC-X5 and M.
3. For circuit number two, the LP2 switch is rewired to EXPC-X6 and M.

Wiring PS1 and PS2 Switches/Relays

In units containing a compressor configuration of 2-Compressor/6-Stage or 4-Compressor/8-Stage, relays need to be added to indicate the PS1 switch status and the PS2 switch status. Figures 20 and 21 show the MicroTech III wiring schematics. See Appendix I, Appendix J, and Appendix K for more information on wiring locations. Follow the directions below when rewiring the RPS1 and RPS2 relays.

1. Install the RPS1 and RPS2 relay coils in series with the PS1 and PS2 switches, respectively. See Figures 23 and 24.
2. Terminate the RPS1 normally open contacts on EXPC-X1 and M.
3. Terminate the RPS2 normally open contacts on EXPC-X2 and M.

Wiring High Pressure Switches 1/2

For all compressor configurations, additional jumper wires need to be installed on the MicroTech III to indicate the High Pressure 1 (HP1) switch status and the High Pressure 2 (HP2) switch status. Each circuit will contain one High Pressure switch. See Figure 22, Figure 23, and Figure 24 for wiring schematics. See Appendix I, Appendix J, and Appendix K for more information on wiring locations. Follow the directions below when wiring additional jumper wires.

1. For circuit number one, install a wire in parallel with the HP1 switch and terminate it on MCB-DI5.
2. For circuit number two, install a wire in parallel with the HP2 switch and terminate it on MCB-DI6.

Figure 19: MicroTech III 6-Compressor/6-Stage

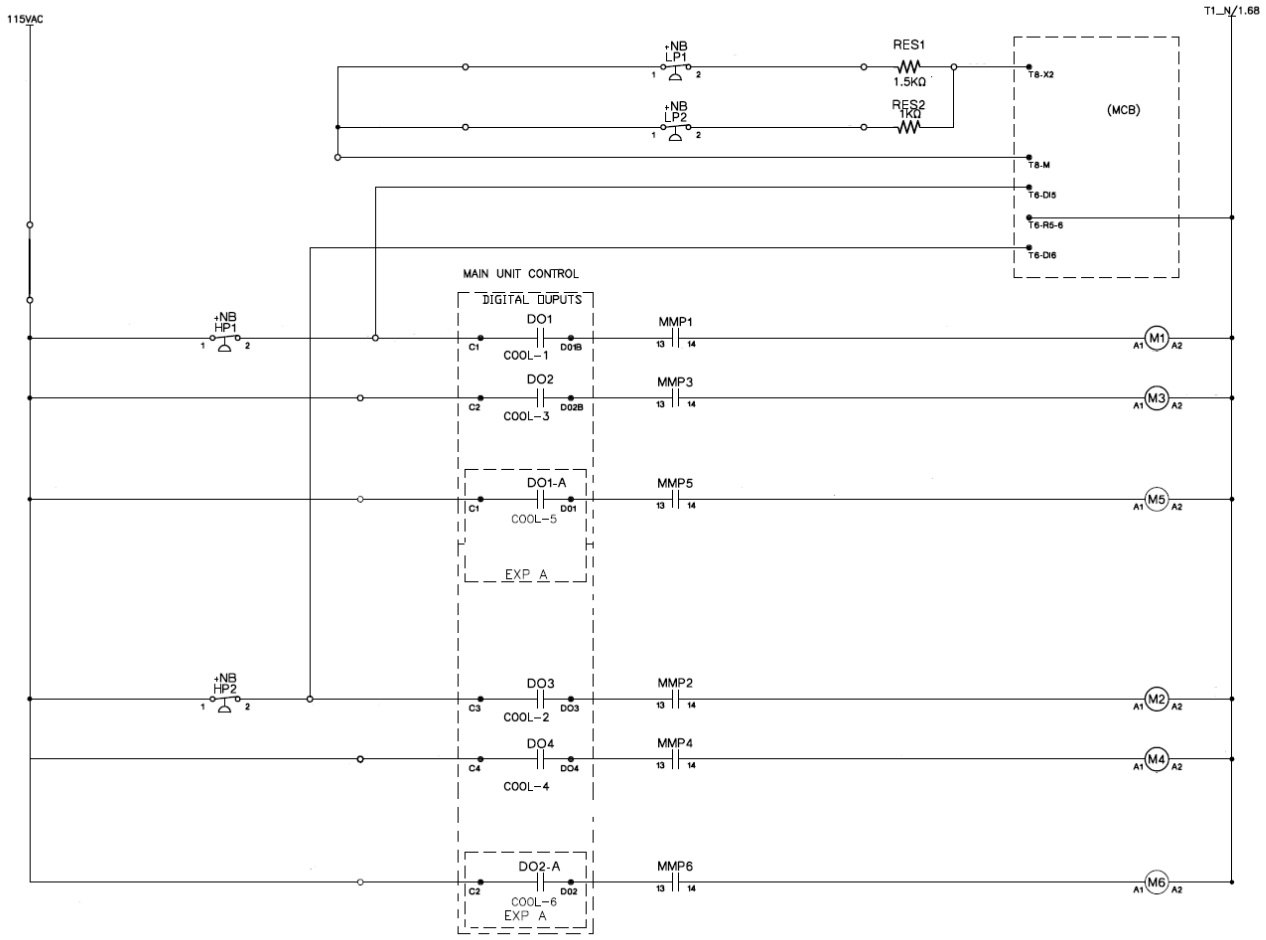


Figure 20: MicroTech III 2-Compressor/6-Stage

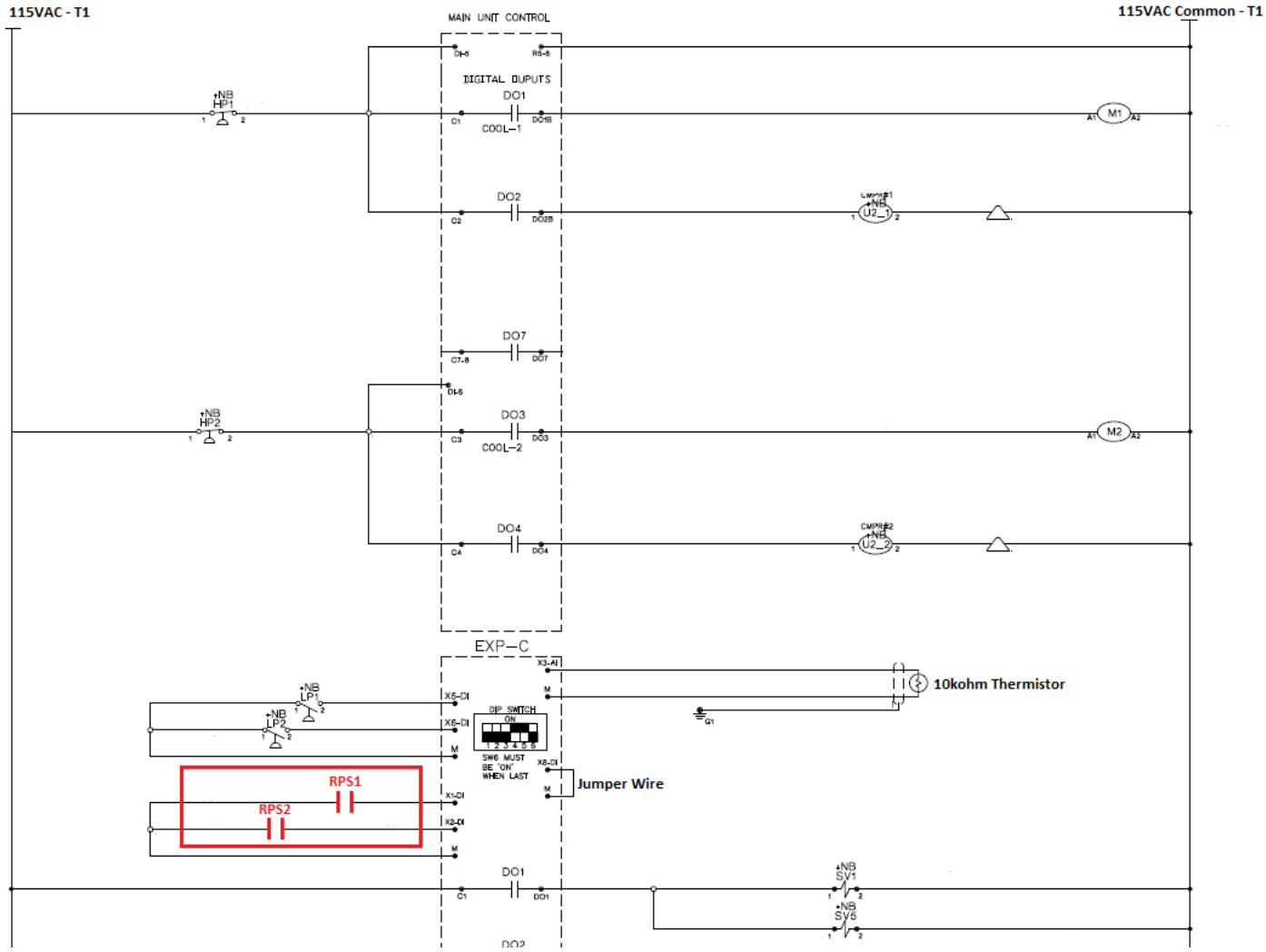


Figure 21: MicroTech III 4-Compressor/8-Stage

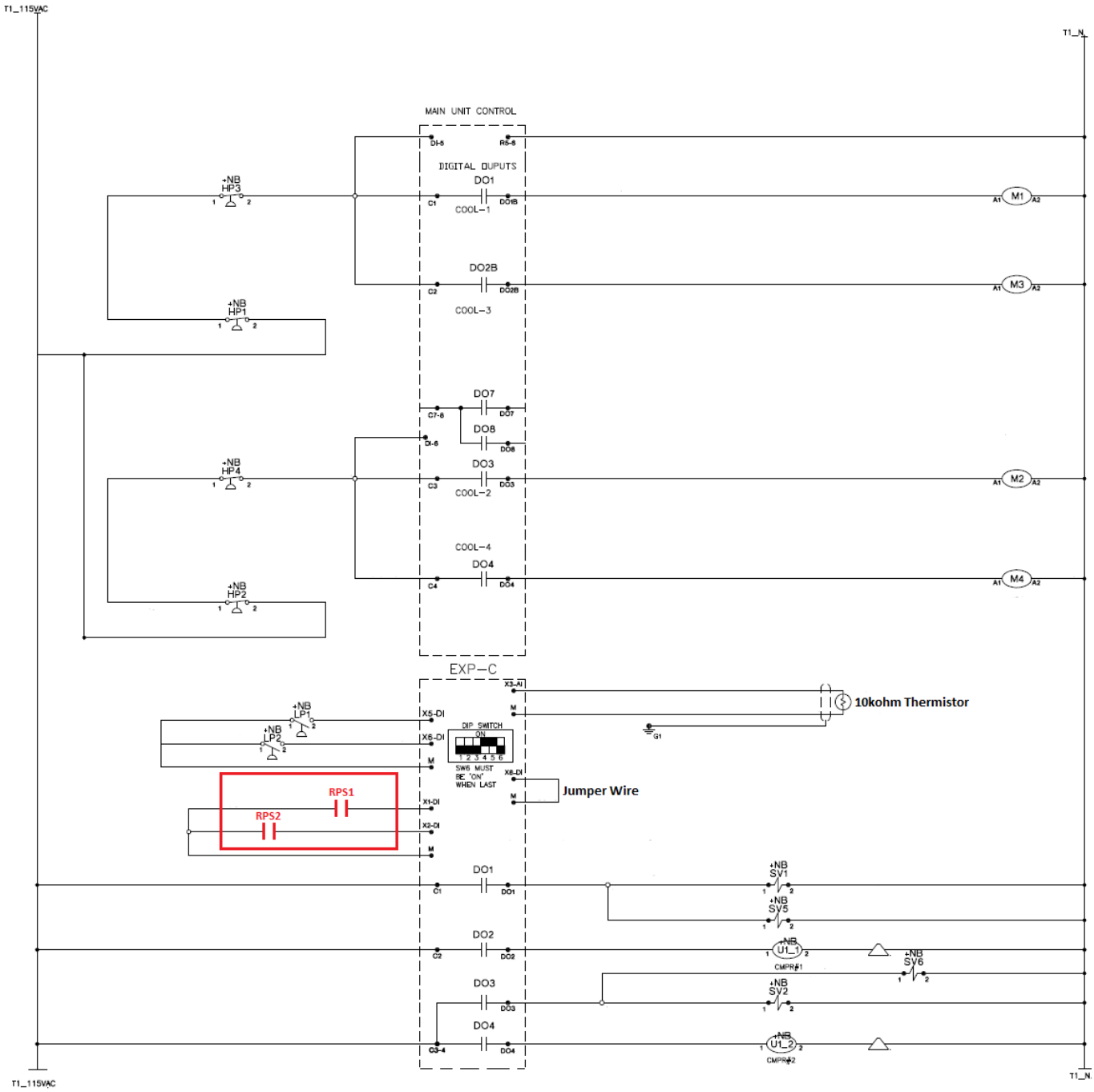


Figure 22: MicroTech I 6-Compressor/6-StageFigure

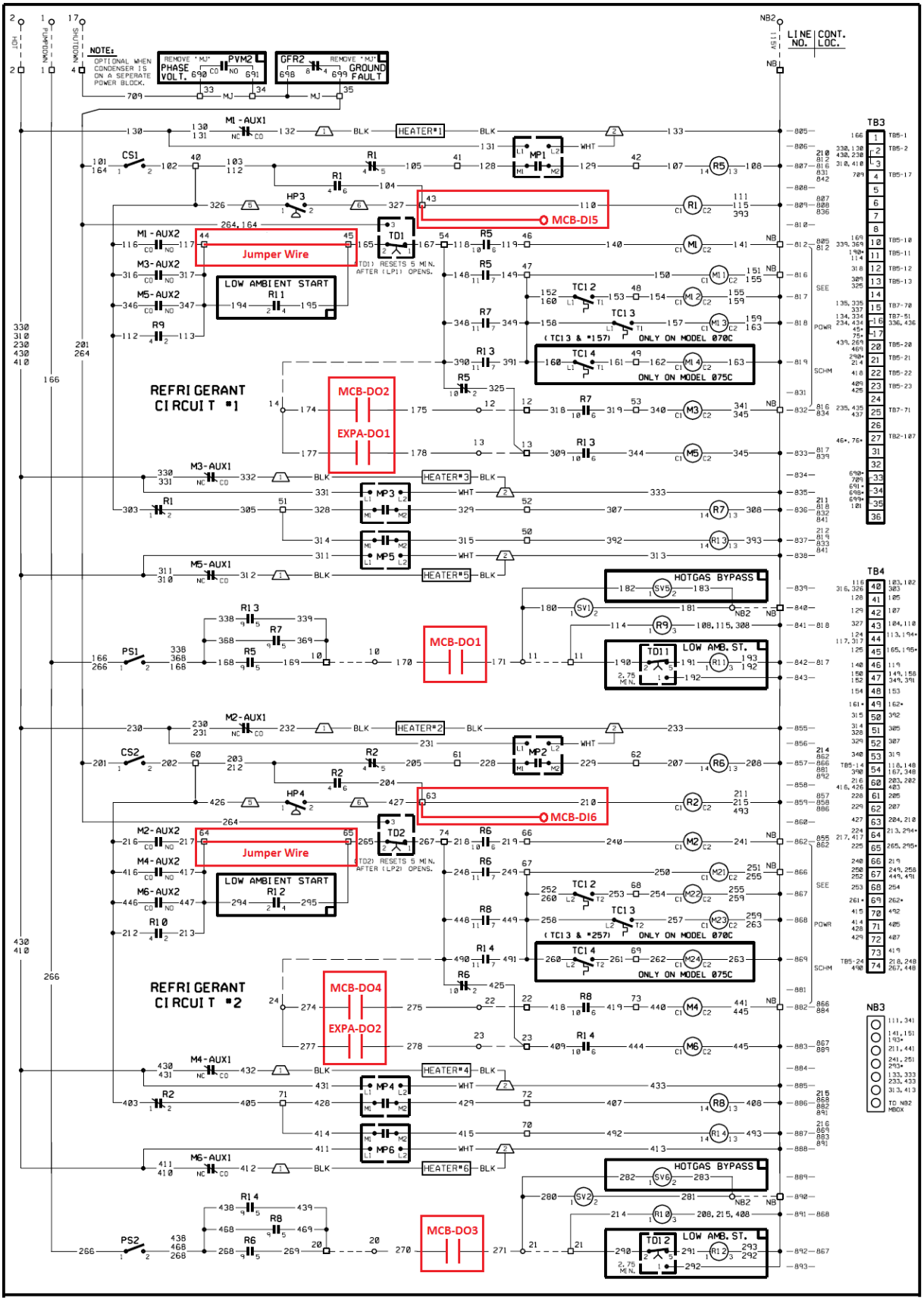


Figure 23: MicroTech I 2-Compressor/6-Stage

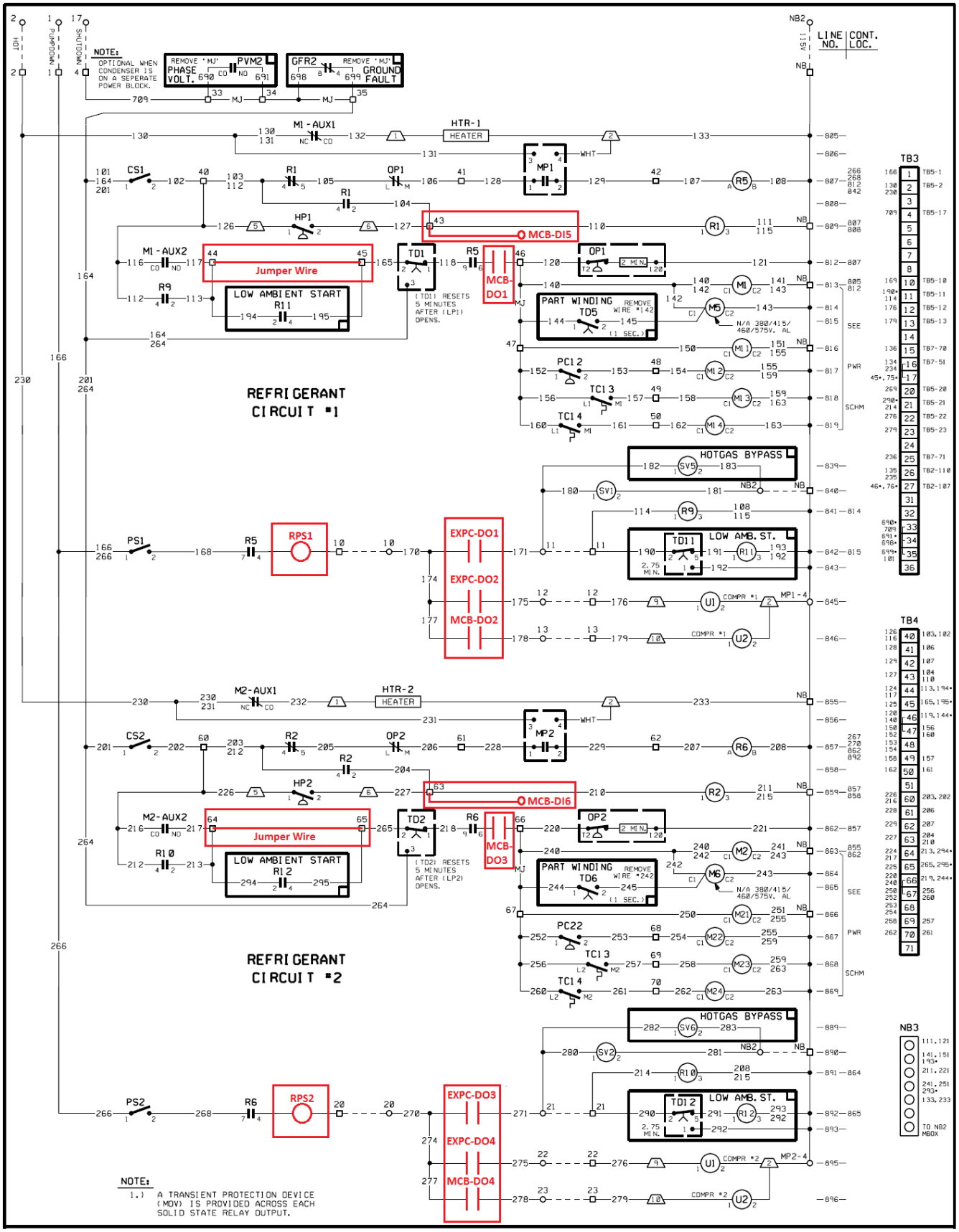
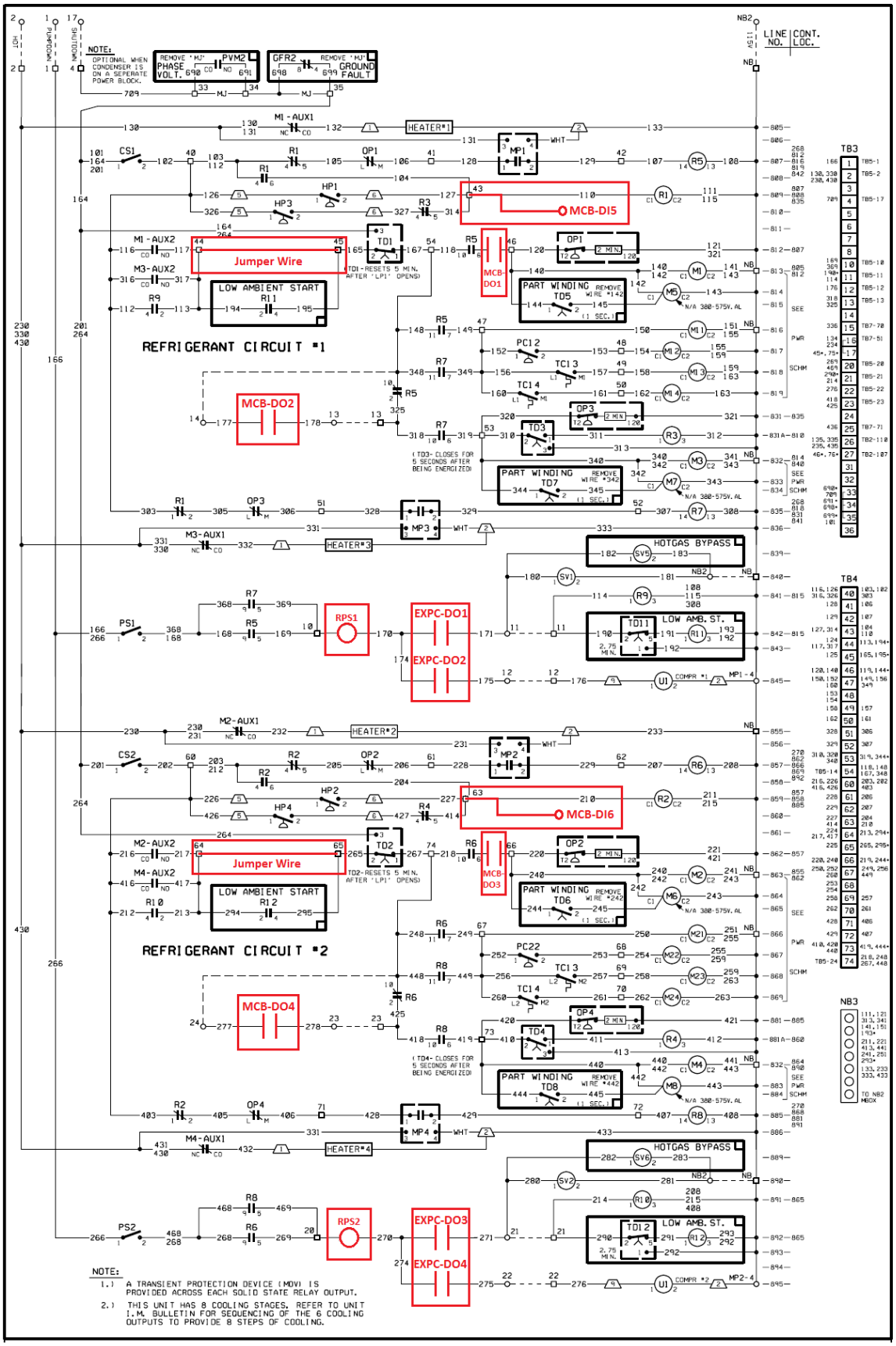


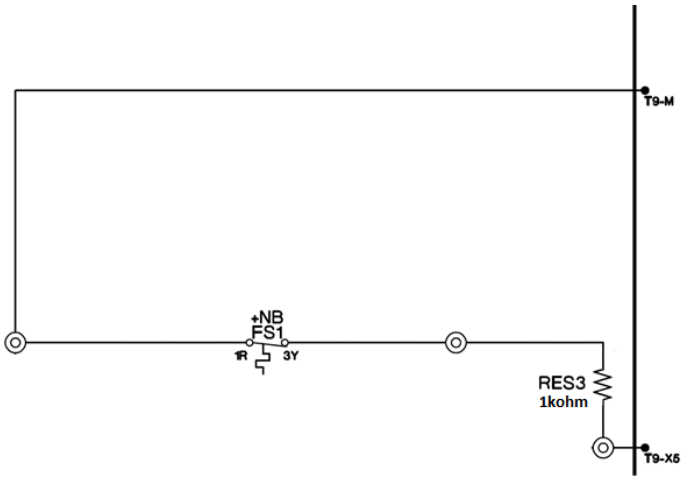
Figure 24: MicroTech I 4-Compressor/8-Stage



Wiring Freezestat

The Freezestat (FS1) is a temperature-based switch that is designed to open at low temperatures in order to protect the hot water or steam coil. The Freezestat should be wired in series with a 1k Ohm resistor. When the Freezestat opens the circuit between X5 and M on the MicroTech III Main Control Board, the unit will read an open signal and generate an alarm. See Figure 25 for wiring information if OAER Switch does not exist.

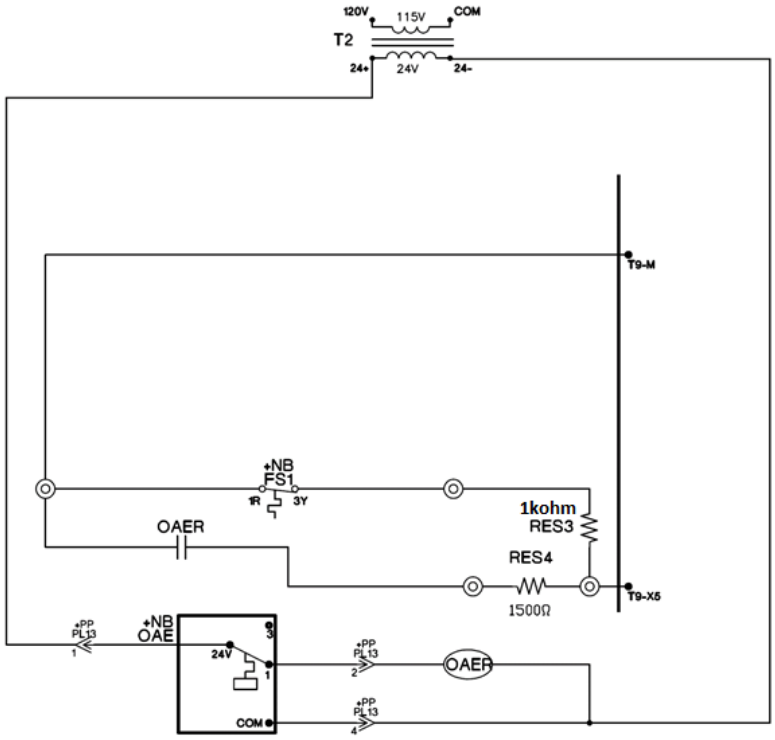
Figure 25:



Wiring OAER Switch and Relay

The Outdoor Enthalpy Switch indicates if the outside air conditions are suitable for free cooling. The OAER Switch is a two-position switch that completes a circuit to energize the OAER relay when the return and outside air enthalpy is suitable for economizing. When the NO contacts of the OAER relay close, this completes a circuit between MCB-X5 and M. A 1500 Ohm resistor is wired in series with the OAER relay NO contacts. If a Freezestat exists, the OAER Relay and FS1 circuits are wired in parallel to MCB-X5. See Figure 26.

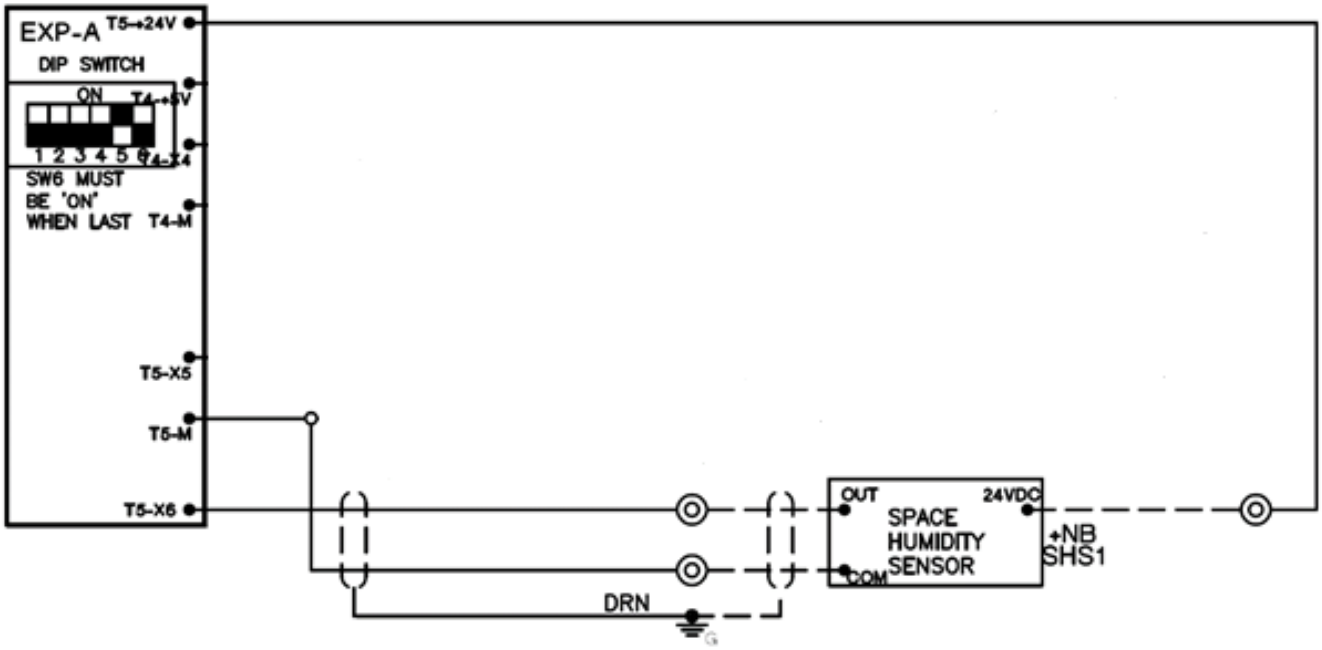
Figure 26:



Wiring Relative Humidity Sensor

The relative humidity sensor (HUM1 or SHS1) wires to EXPA-X5. If the sensor on the MicroTech I outputs a 0-5 VDC signal, the sensor will need to be replaced. The MicroTech III accepts a 0-10 VDC or 4-20 mA signal. See Figure 27.

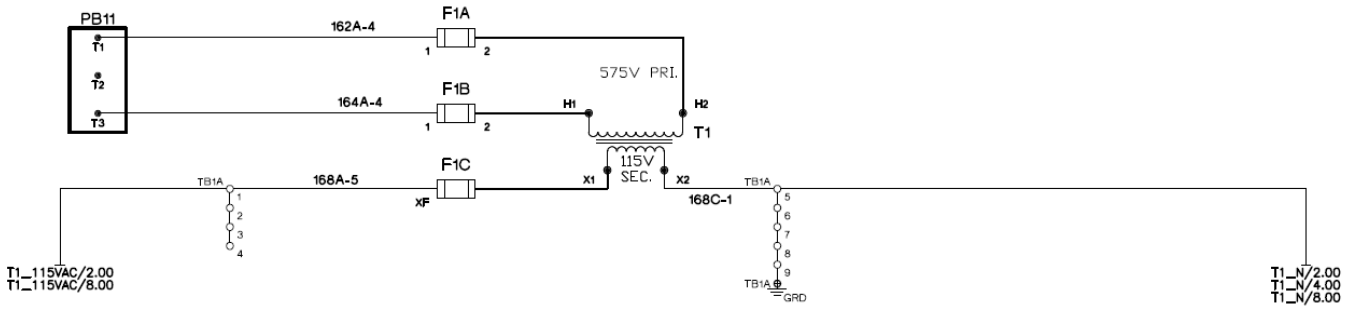
Figure 27:



Wiring OA Damper Actuator

The MicroTech I controller uses floating point control for the OA Damper actuator. The MicroTech III does not use floating point control. Instead, it uses a direct analog signal to the OA Damper Actuator (ACT3) to modulate the OA Damper capacity. The MicroTech III provides a 0-10 VDC signal to the OA Damper Actuator. If the OA Damper Actuator does not support 0-10 VDC signal, it needs to be replaced. See Figure 28.

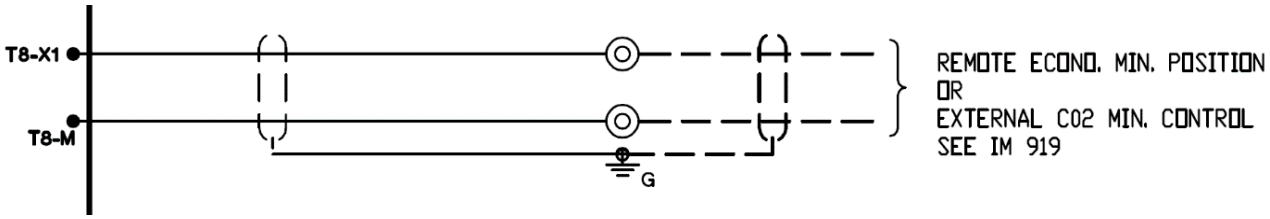
Figure 28:



Wiring OA Damper Reset

On units equipped with a 0-100% modulating economizer, the minimum outside air damper position set point can be reset by an external voltage or current signal. The MicroTech III accepts 0-10 VDC or 4-20mA signal. If the OA Damper Reset signal does not align with one of these supported analog signals, it needs to be replaced. Wire the analog signal to MCB-X1. See Figure 29.

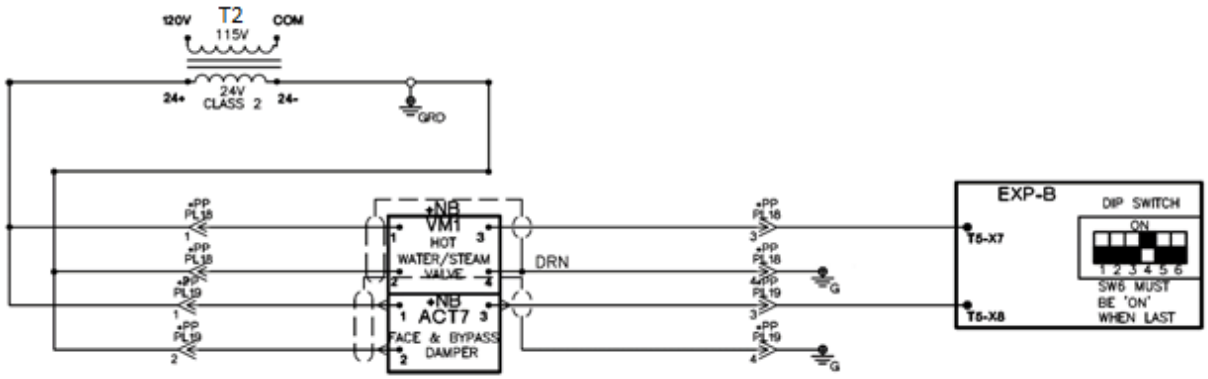
Figure 29:



Wiring F&BP Dampers and Water/Steam Valve

The unit may be equipped with steam or hot water heat and equipped with face and bypass damper control. The MicroTech I controller uses floating point control for the Face and Bypass (F&BP) Dampers and the hot water/steam valve. The MicroTech III does not use floating point control. Instead, it uses 2-10 VDC analog signal to control the F&BP damper and hot water/steam valve. If the F&BP damper or the hot water/steam valve does not support a 2-10 VDC signal, it needs to be replaced. See Figure 30.

Figure 30:



Wiring Chilled Water Valve

The unit may be equipped with chilled water cooling. The MicroTech I controller uses floating point control. The MicroTech III controller does not use floating point control. Instead, it uses a direct 2-10 VDC analog signal for Chilled Water Valve position. If the Chilled Water Valve does not support a 2-10 VDC output signal, it needs to be replaced. See Figure 31.

Figure 31:

Supply and Exhaust Fans Start/Stop Wiring – No Variable Frequency Drives

The MicroTech I controlled Rooftop unit may include a fixed speed Supply Fan. There will not be a Variable Frequency Drive installed if the Supply Fan is fixed speed. Digital Output MCB-DO5 on the MicroTech III will be used to enable/disable the Supply Fan. See the wiring charts in Appendix I, Appendix J and Appendix K for wiring information.

Wiring the Supply Fan and Return/Exhaust Fan Variable Frequency Drives

The Supply and Return/Exhaust Fan Variable Frequency Drives will be connected to the MicroTech III through a pair of Modbus communication wires. A normally closed set of contacts from the R63 relay are wired to the Variable Frequency Drive on terminal DI2.

If the R63 relay contacts are closed, this indicates that the DHL Switch is closed the Variable Frequency Drive is enabled to run. A normally closed set of contacts from a R25 relay can be wired to the Variable Frequency Drive on terminal DI5. The Variable Frequency Drive can be programmed to operate at a constant speed if the R25 contacts are closed.

See an example of the ABB Variable Frequency Drive wiring diagram in Figure 32. Wiring for Schneider and Danfoss Variable Frequency Drives can be found in Appendix G. Refer to manual OM 844 and OM1190 for information on Schneider and ABB Variable Frequency Drives, respectively.

NOTE: Once the Variable Frequency Drive is installed and wired correctly, the parameters for the Variable Frequency Drive must be set. See “Programming the Variable Frequency Drive” in this manual for instructions.

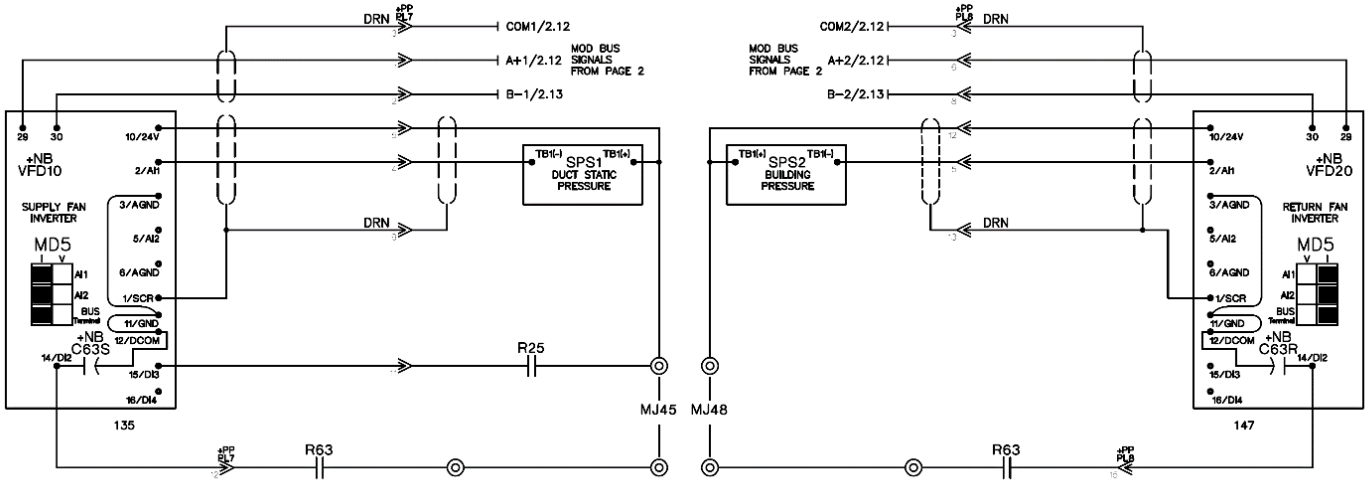
Wiring the Duct Static Pressure Sensor and Building Static Pressure Sensor

If there is an ABB, Schneider or Danfoss Variable Frequency Drive installed, the Duct Static Pressure and Building Static Pressure sensors wire directly to the Variable Frequency Drives.

The 4-20mA output signal from the Duct Static Pressure sensor is wired to the AI1 terminal on the ABB Variable Frequency Drive for Supply Fan. The MicroTech III reads in the Duct Static Pressure transducer signal through Modbus and sends a speed signal to the Variable Frequency Drive in order to maintain the Duct Static Pressure set point. See Figure 32. See Appendix G for Duct Static Pressure wiring on Schneider and Danfoss Variable Frequency Drives.

The 4-20mA output signal from the Building Static Pressure sensor is wired to the AI1 terminal on the ABB Variable Frequency Drive for RF/EF Fan. The MicroTech III reads in the Building Static Pressure sensor signal through Modbus and sends a speed signal to the Variable Frequency Drive in order to maintain the Building Static Pressure set point. See Figure 32. See Appendix G for Building Static Pressure wiring on Schneider and Danfoss Variable Frequency Drives.

Figure 32:



Wiring Electric Heat - Heating Stages

The MicroTech I controller supports up to 6 stages of electric heat through Output Board C BO0-BO5. In the MicroTech III control panel, the Expansion Module B Digital Outputs DO1-DO6 perform the same function as the MicroTech I control panel BO0-BO5. See Figure 33. See Appendix I, Appendix J and Appendix K for more wiring information.

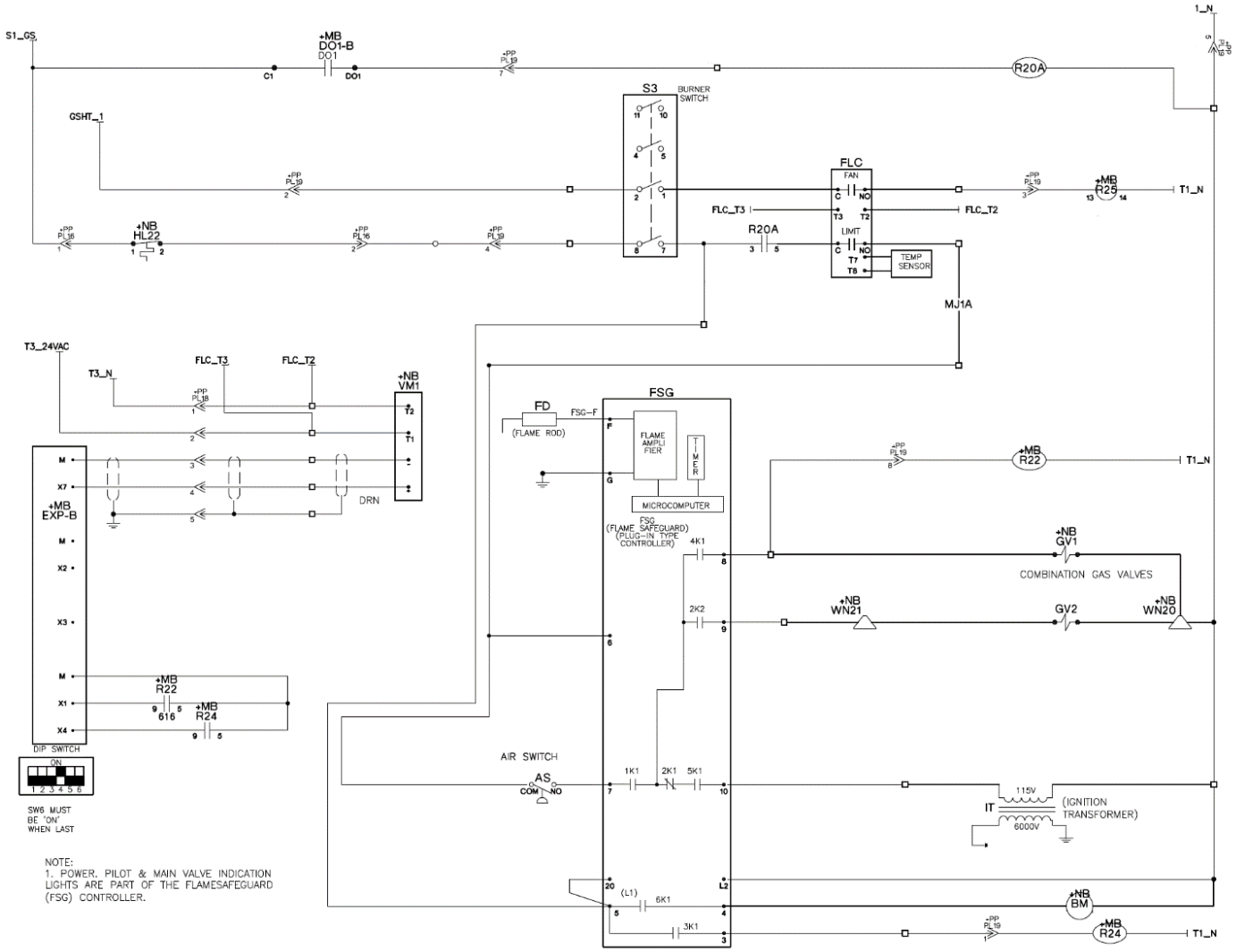
Figure 33:

Wiring Heating Valve (VM1) for 3:1 Burner

In the MicroTech I control panel, Output Board A digital outputs (OBA) and the R23 relay are utilized to open and close floating point heating valve actuator. The MicroTech III controller controls the heating valve through a direct, 2-10VDC analog signal from EXPB-X7. Upon a call for heat, the MicroTech III controller will close digital output EXPB-DO1. After the flame has lit, proven and the heating stage time has passed, the controller will modulate VM1 to the required rate via analog output EXPB-X7.

In the event that the flame does not ignite, or if the flame safeguard does not detect its flame within 10 seconds, the burner will be de-energize. The FSG will lockout and will require manual resetting. FSG terminal #3 will energize R24 relay, send a signal to EXPB-X4, and controller will drive VM1 to the closed position. At the same time the EXPB-DO2 will open and the pre-purge sequence will be disabled and reset. See Figure 34 and Appendix I, Appendix J and Appendix K for wiring information.

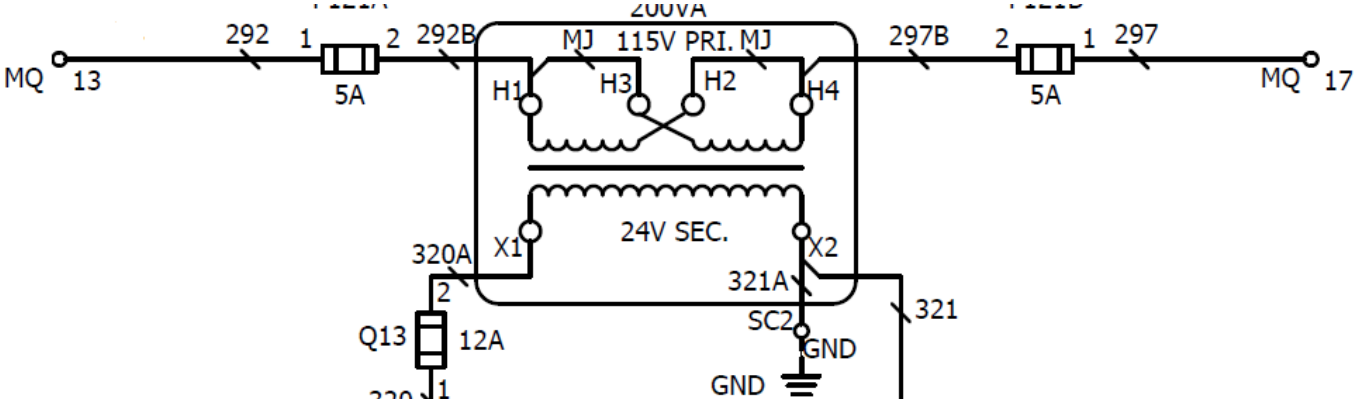
Figure 34:



Wiring of Network Communication Module

A Network communication module is optional to allow for communication between the unit controller and a Building Management System. There are three Communication Module options: BACnet MS/TP, BACnet IP, and LON (SCC and DAC). Check polarity before connecting the wires, if applicable. Do not wire the third reference conductor or shield to the network communication module. See to Figure 35 for BACnet MS/TP wiring example.

Figure 35:



Programming the MicroTech III and Variable Frequency Drive

Programming the MicroTech III

Once the MicroTech III and all the auxiliary electrical devices are installed and wired, the controller will need to be programmed. There are three tasks when programming the MicroTech III controller: Verify and Update Software Code, Set Unit Configuration, and Set Parameters.

Verify and Update Software Code

The unit's software code must be updated to the newest code. See the SIL in Appendix C for instructions on how to upload software code to the MicroTech III controller.

Set Unit Configuration

Each MicroTech III has a unique Unit Configuration that must be set according to the unit's features and capabilities. See IM 919-4 for instructions and unit configuration options.

NOTE: To support the MicroTech I to MicroTech III control panel conversion for units with reciprocating compressors with unloaders, the MicroTech III will need to be configured as an RPE (Evaporative Condenser) unit to allow pump down logic. This specific configuration is set through the Compressorized Cooling Configuration option in the MicroTech III Unit Configuration.

- Unit Configuration Code Position 4 (Compressorized Cooling Configuration) will need to be set to a '4' for a 2-Compressor/6-Stage configuration and it will need to be set to a 'E' for a 4-Compressor/8-Stage configuration.
- Both configurations require Unit Configuration Code Position 7 (Condenser Control) to be set to a '2' for EvapABB. There will not be an ABB Variable Frequency Drive installed to control the condenser fans, however, this Unit Configuration setting is required for proper unit operation.

NOTE: If the control panel being converted belongs to a Rooftop unit with Compressor Cooling Configurations 2-Compressor/2-Stage, 4-Compressor/4-Stage or 6-Compressor/6-Stage, the MicroTech III Unit Configuration Code Position 5 (Generic Condenser Stages) will need to set to a value equal to the number of compressors in the unit to allow for proper unit operation.

Set Parameters

After the software code is updated and the unit configuration is set, the parameters on the MicroTech III will need to be set according to the site's specific application.

Programming the Variable Frequency Drive

After the Variable Frequency Drive is installed and wired, the parameters need to be set. See charts in Appendix D through F and set the parameters depending on the type of drive.

Appendix A

Figure 36: Dip Switch Settings

Expansion Board A	Switch #5 in the up position (all others down)	
Expansion Board B	Switch #4 in the up position (all others down)	
Expansion Board C	Switch #4 and #5 in the up position (all others down)	
Expansion Board D	Switch #3 in the up position (all others down)	
Expansion Board E	Switch #3 and #5 in the up position (all others down)	
Dipswitch #6	Switch #6 **must** be in the up position on the last expansion board in the string regardless whether it is A, B, C, D, or E.	

Appendix B

Figure 37:

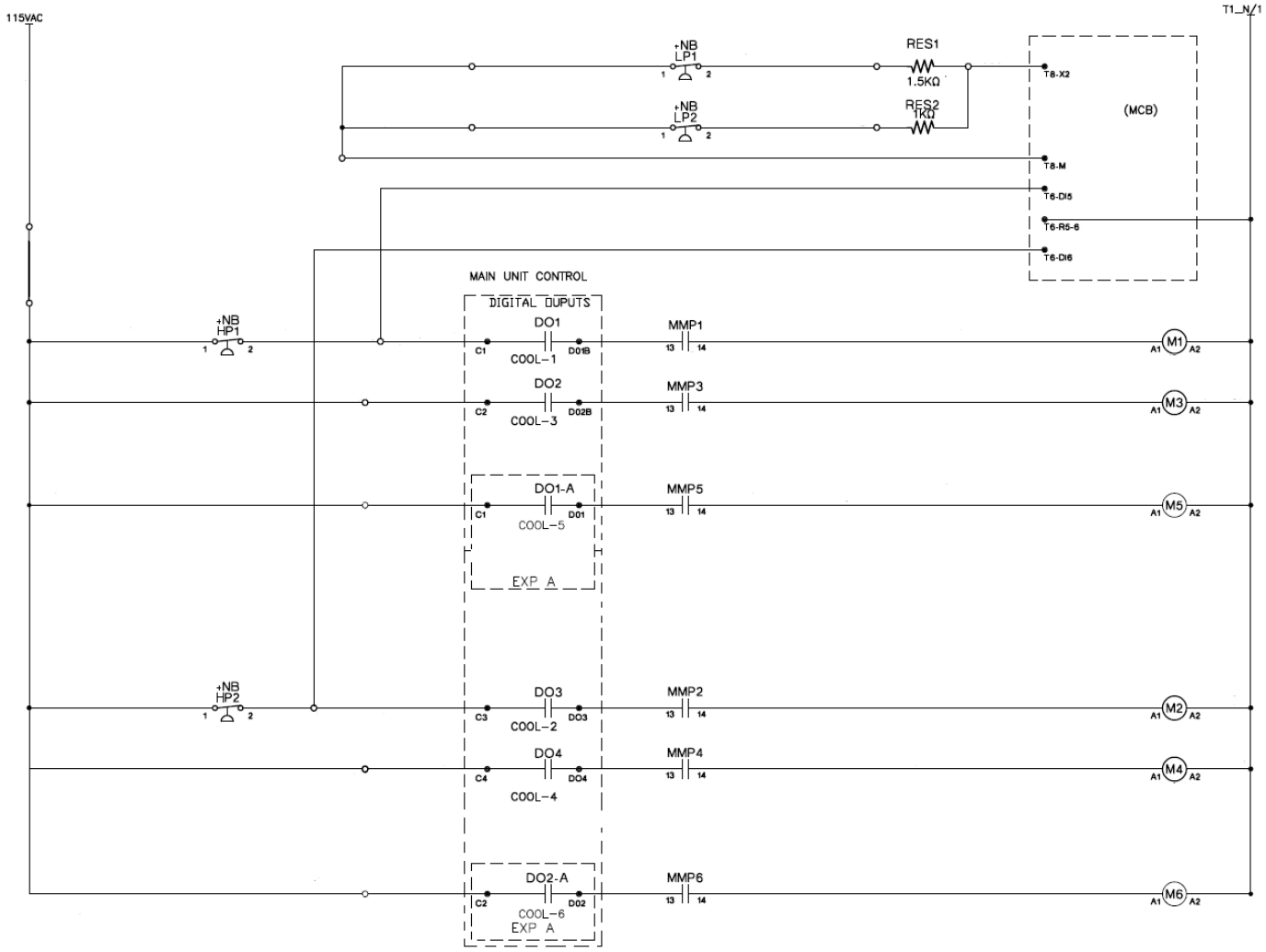


Figure 38:

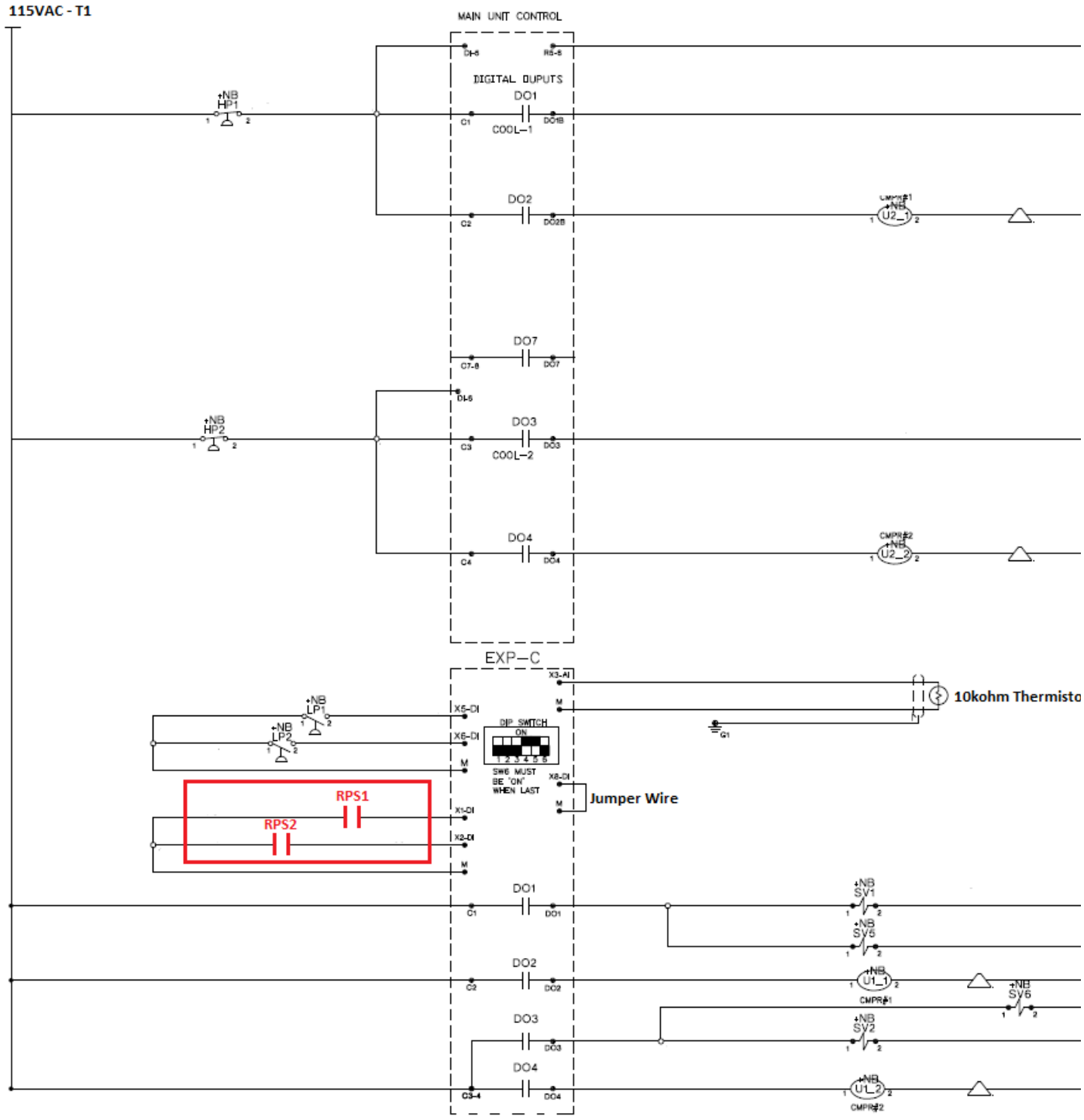

115VAC - T1
MAIN UNIT CONTROL
DIGITAL OUPUTS
DO1
COOL–1
DO2
DO7
DO3
COOL–2
DO4
EXP–C
10kohm Thermisto
DIP SWITCH
ON
1 2 3 4 5 6
SW6 MUST BE "ON" WHEN LAST
Jumper Wire
RPS1
RPS2
HP1
HP2
LP1
LP2
SV1
SV2
SV6
U1_1
U1_2
U2_1
U2_2

Figure 39:

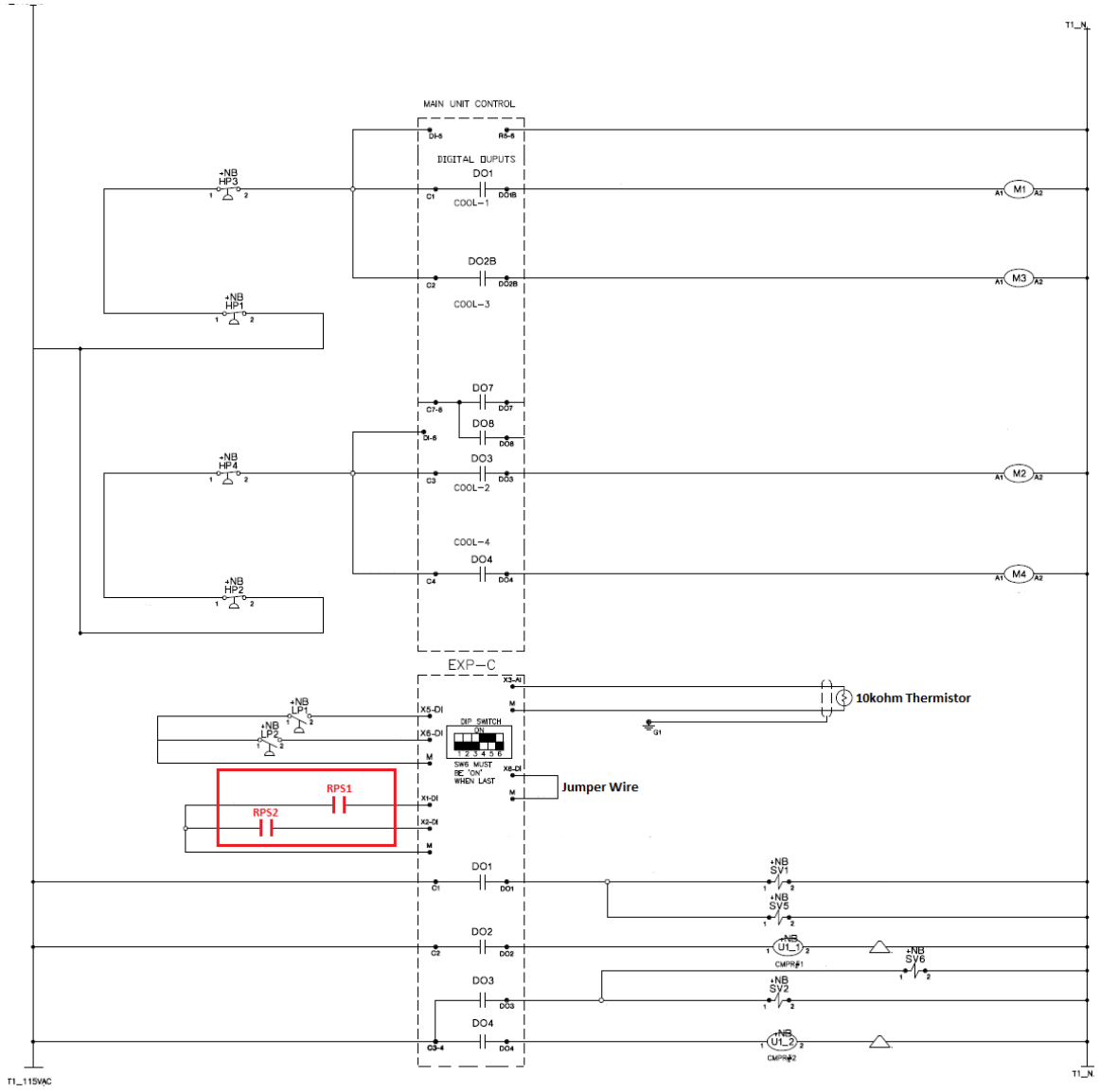

MAIN UNIT CONTROL
DIGITAL OUPUTS
DO1
COOL–1
DO2B
COOL–3
DO7
DO8
DO3
COOL–2
COOL–4
DO4
EXP–C
10kohm Thermistor
DIP SWITCH
SW6 MUST BE "ON" WHEN LAST
Jumper Wire
RPS1
RPS2
T1_115VAC
T1_N

Figure 40:

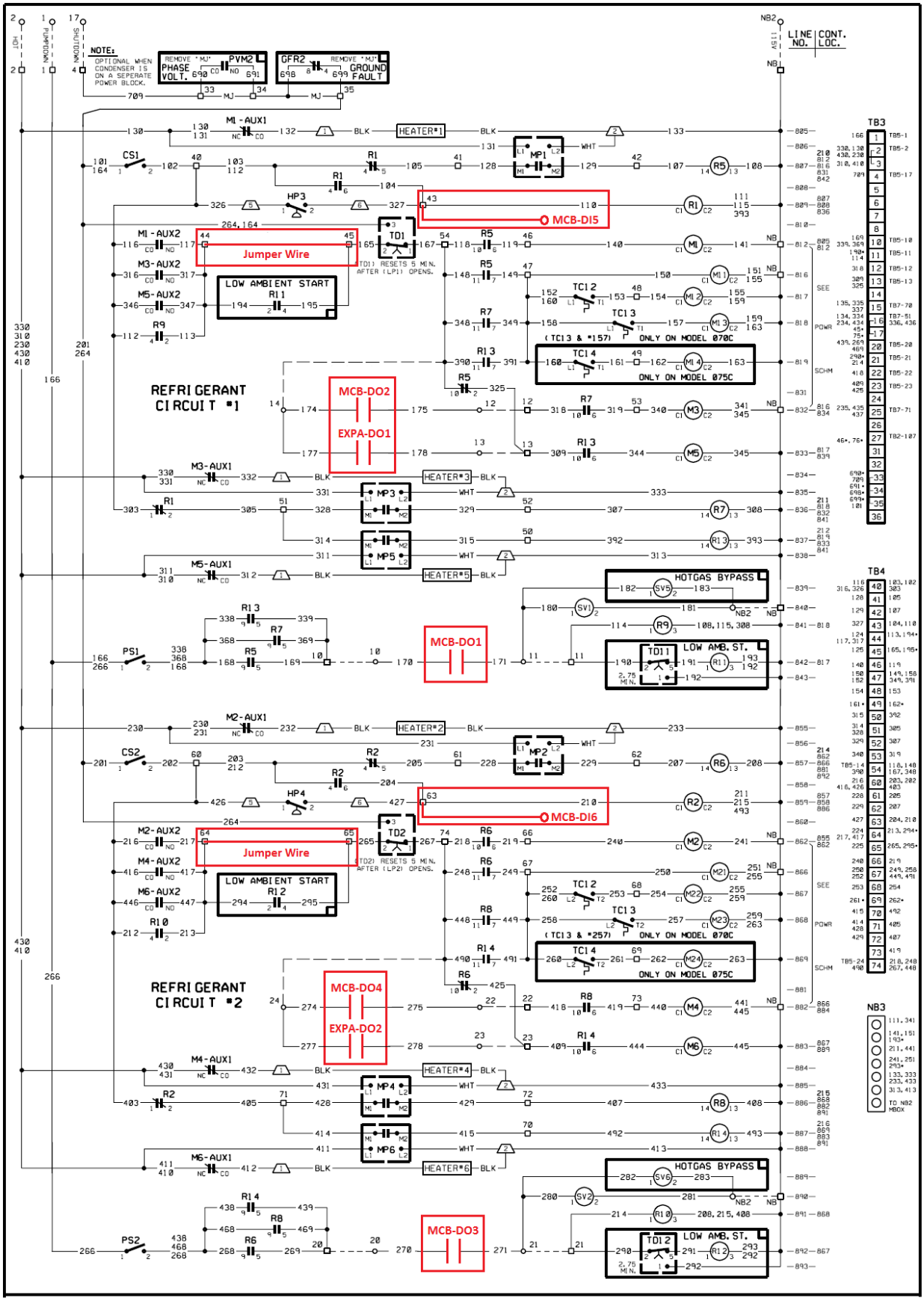

NOTE:
OPTIONAL WHEN CONDENSER IS ON A SEPERATE POWER BLOCK.
PHASE VOLT.
GROUND FAULT
M1-AUX
CS1
R1
HP3
MCB-DI5
Jumper Wire
LOW AMBIENT START
TD1
REFRIGERANT CIRCUIT #1
MCB-DO2
EXPA-DO1
M3-AUX
M5-AUX
HEATER#1
HEATER#3
HEATER#5
MP1
MP3
MP5
HOTGAS BYPASS
LOW AMB. ST.
MCB-DO1
PS1
M2-AUX
CS2
R2
HP4
MCB-DI6
TD2
REFRIGERANT CIRCUIT #2
MCB-DO4
EXPA-DO2
M4-AUX
M6-AUX
HEATER#2
HEATER#4
HEATER#6
MP2
MP4
MP6
PS2
MCB-DO3
TB3
TB4
NB3
LINE | CONT. NO. | LOC.

Figure 41:

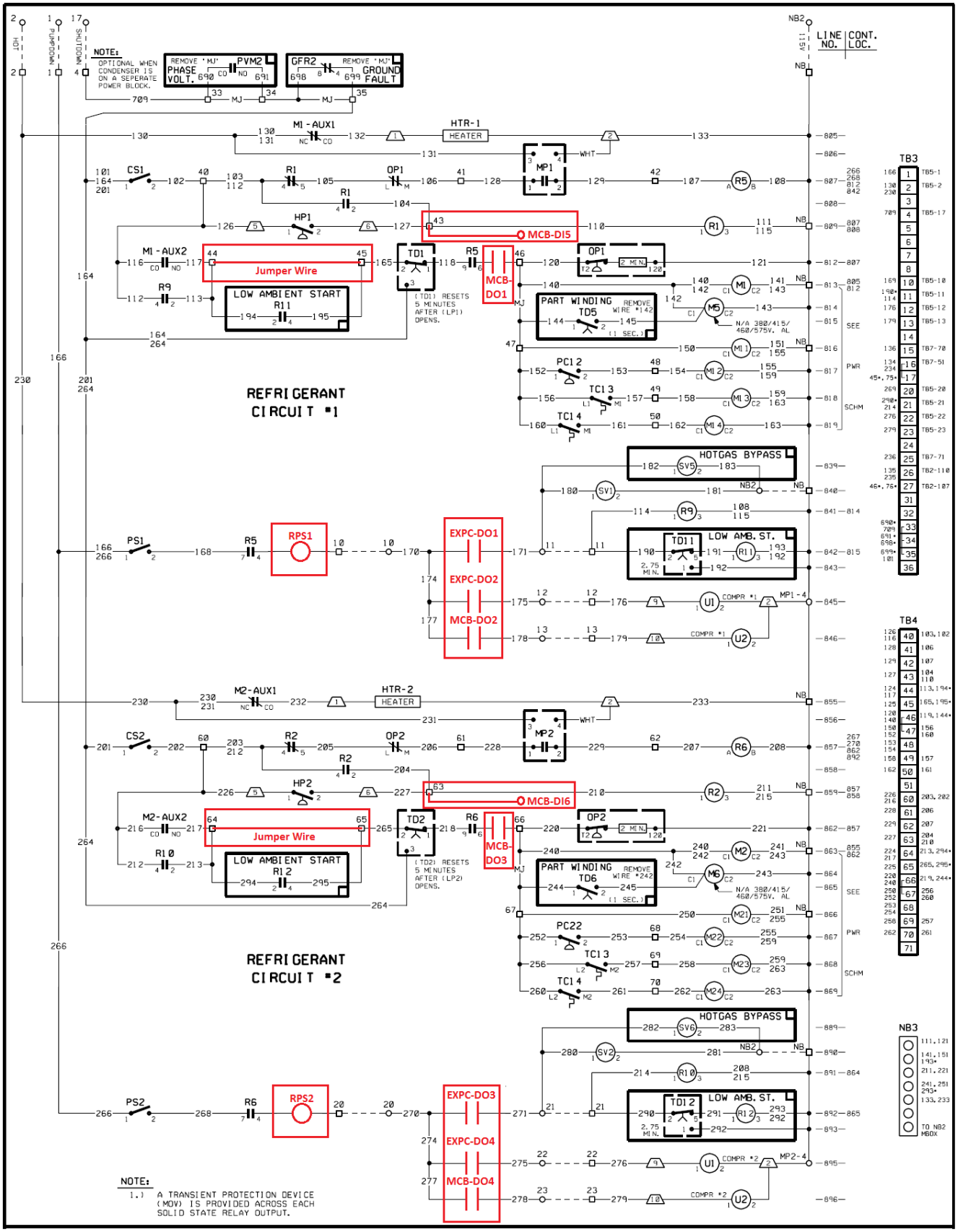

NOTE:
OPTIONAL WHEN CONDENSER IS ON A SEPERATE POWER BLOCK.
REMOVE 'MJ' PHASE VOLT. PVM2
GFR2 REMOVE 'MJ' GROUND FAULT
M1-AUX1
HTR-1 HEATER
CS1
R1
OP1
MP1
HP1
MCB-DI5
M1-AUX2
Jumper Wire
LOW AMBIENT START R11
TD1
(TD1) RESETS 5 MINUTES AFTER (LP1) OPENS.
R5
MCB-DO1
PART WINDING TD5
REMOVE WIRE #142
N/A 380/415/460/575V. AL
R9
PC12
TC13
TC14
REFRIGERANT CIRCUIT #1
HOTGAS BYPASS
SV5
SV1
PS1
RPS1
EXPC-DO1
EXPC-DO2
MCB-DO2
LOW AMB. ST.
TD11
2.75 MIN.
U1 COMPR #1
U2 COMPR #1
M2-AUX1
HTR-2 HEATER
CS2
R2
OP2
MP2
HP2
MCB-DI6
M2-AUX2
Jumper Wire
LOW AMBIENT START R12
TD2
(TD2) RESETS 5 MINUTES AFTER (LP2) OPENS.
R6
MCB-DO3
PART WINDING TD6
REMOVE WIRE #242
N/A 380/415/460/575V. AL
PC22
TC13
TC14
REFRIGERANT CIRCUIT #2
HOTGAS BYPASS
SV6
SV2
PS2
RPS2
EXPC-DO3
EXPC-DO4
MCB-DO4
LOW AMB. ST.
TD12
2.75 MIN.
U1 COMPR #2
U2 COMPR #2
NOTE:
1.) A TRANSIENT PROTECTION DEVICE (MOV) IS PROVIDED ACROSS EACH SOLID STATE RELAY OUTPUT.
LINE NO. CONT. LOC.
TB3
TB4
NB3
TO NB2 MBOX

Figure 42:

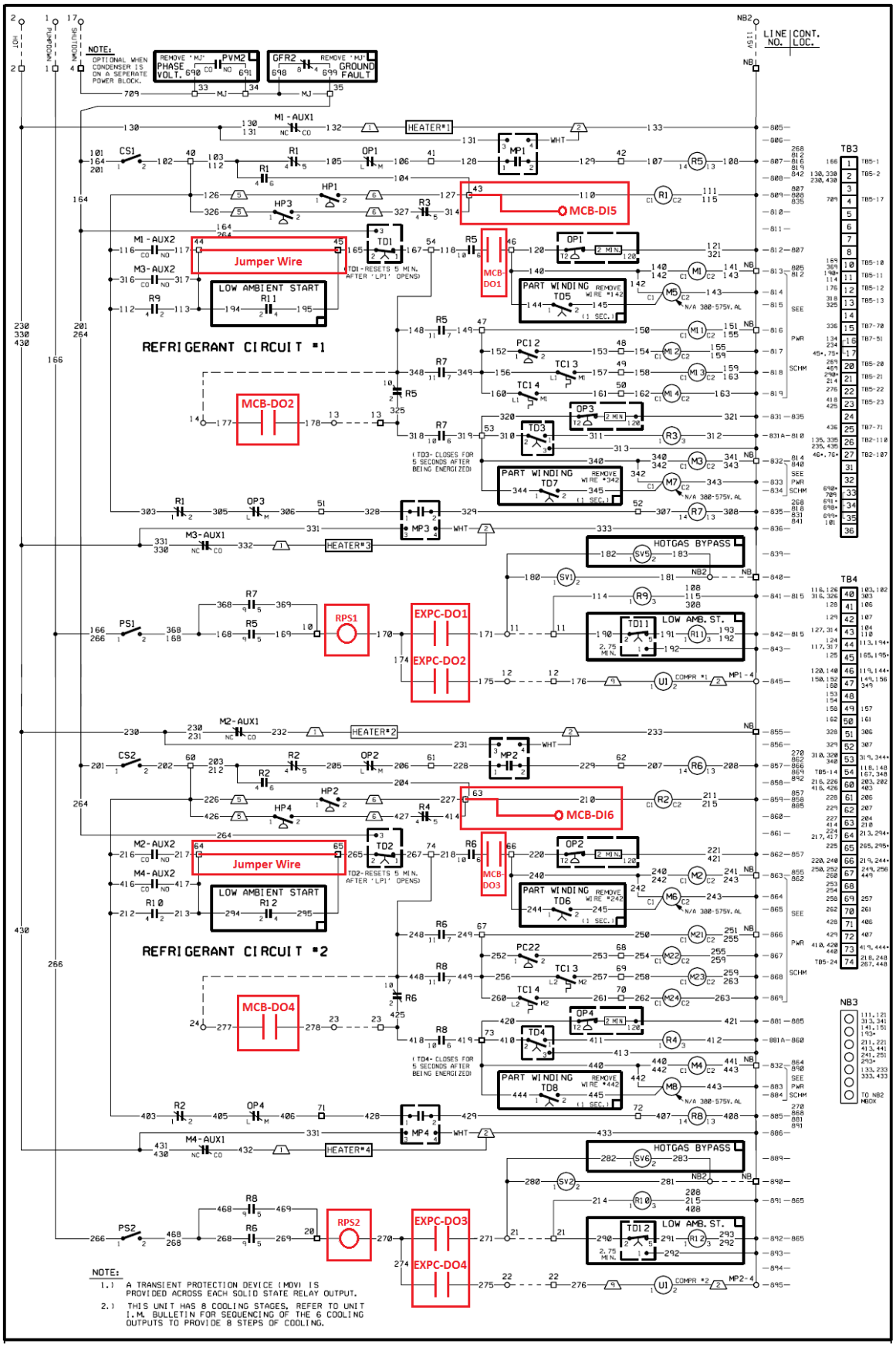

NOTE:
OPTIONAL WHEN CONDENSER IS ON A SEPERATE POWER BLOCK.
REMOVE 'MJ' PHASE VOLT. PVM2
REMOVE 'MJ' GROUND FAULT GFR2
LINE CONT. NO. LOC.
M1-AUX1
HEATER*1
CS1
R1
OP1
HP1
HP3
R3
MCB-DI5
M1-AUX2
Jumper Wire
TD1
R5
MCB-DO1
M3-AUX2
LOW AMBIENT START R11
R9
PART WINDING REMOVE WIRE *142 TD5
OP1 2 MIN
M1
M5
REFRIGERANT CIRCUIT #1
PC12
TC13
TC14
R7
MCB-DO2
OP3
TD3
M3
M7
HEATER*3
M3-AUX1
MP3
HOTGAS BYPASS
SV5
SV1
R9
LOW AMB. ST. TD11 R11
PS1
RPS1
EXPC-DO1
EXPC-DO2
COMPR #1
M2-AUX1
HEATER*2
CS2
R2
OP2
HP2
HP4
R4
MCB-DI6
M2-AUX2
Jumper Wire
TD2
R6
MCB-DO3
M4-AUX2
LOW AMBIENT START R12
R10
PART WINDING REMOVE WIRE *242 TD6
OP2 2 MIN
M2
M6
REFRIGERANT CIRCUIT #2
PC22
TC23
TC24
R8
MCB-DO4
OP4
TD4
M4
M8
HEATER*4
M4-AUX1
MP4
HOTGAS BYPASS
SV6
SV2
R10
LOW AMB. ST. TD12 R12
PS2
RPS2
EXPC-DO3
EXPC-DO4
COMPR #2
TB3
TB4
NB3
NOTE:
1.) A TRANSIENT PROTECTION DEVICE (MOV) IS PROVIDED ACROSS EACH SOLID STATE RELAY OUTPUT.
2.) THIS UNIT HAS 8 COOLING STAGES. REFER TO UNIT I.M. BULLETIN FOR SEQUENCING OF THE 6 COOLING OUTPUTS TO PROVIDE 8 STEPS OF COOLING.

Figure 43:


Wind River Intelligent Device Platform 2.0
Host: WR-IntelligentDevice
Date: 2014-06-19
Uptime: 9 days, 23:12, 0 users
Time: 14:34:25
Load: 3.74, 3.22, 2.92
ut
Reboot

Appendix C

Figure 44: Code Update SIL

DAIKIN

Service Information Letter

Technical Response Center – Applied Air – Plymouth, MN

SIL-ALL-18-001 Date: February 16, 2018
Originator: Faraz Currimbhoy, Technical Response Center
Supersedes: SIL-ALL-17-016

Microtech III Controller Software Upgrade Procedures

Use this procedure to upgrade the MicroTech III controller application software and firmware.

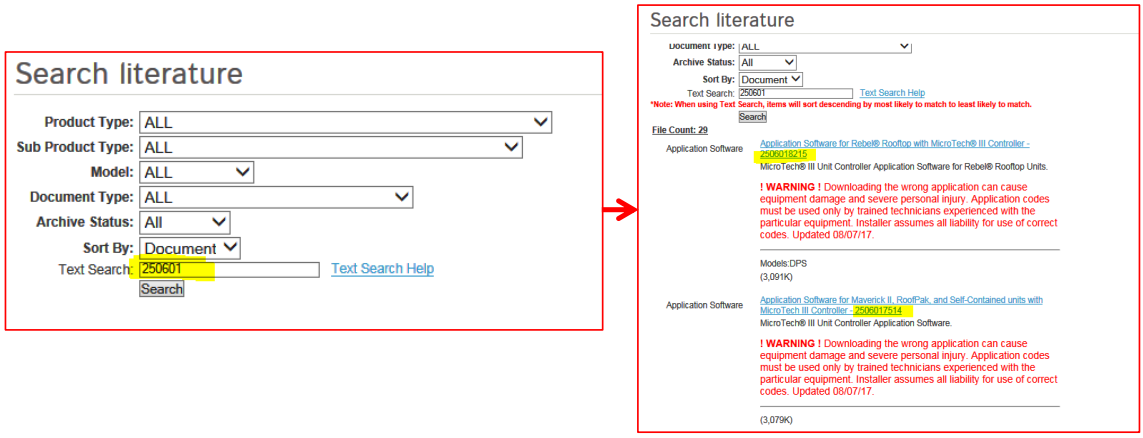
Tools Required:

- 3/64" (1 mm) Allen Key
- Flat head screw driver to open control panel door
- SD memory card no larger than 2GB for firmware less than 8.46
- SD memory card no larger than 8GB with a FAT32 file system format for firmware higher than 8.46

Note – If the controller has a BSP version older than 8.40 or the APP version is earlier than 2506017300 contact Daikin Applied Technical Response group for support.

Preparing the SD Card

1. To download the software code files online, navigate to http://www.daikinapplied.com/search.php
2. Under the Search Literature section type "250601" under the text search box and click search



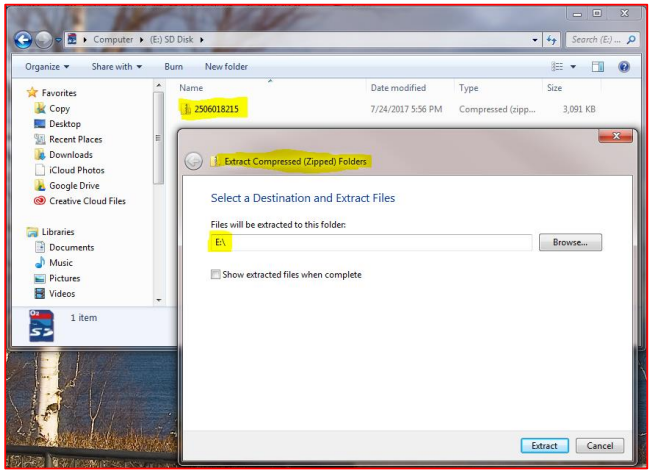
3. Scroll down to find the appropriate software version to download and save it to the Desktop.
   a. 2506017xxx represents Roofpack, Maverick (MPS), and Self-Contained (SWP, SWT) code.
   b. 2506018xxx represents Rebel (DPS) code

   Note: (XXX) changes as the software versions are revised for the respective product lines below.

DAIKIN

Figure 44 continued: Code Update SIL

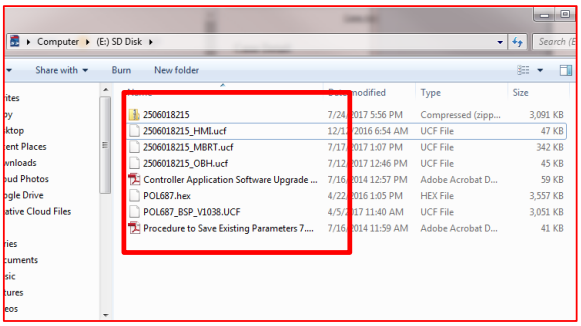
4. Drag the zip file to the freshly formatted SD card and extract it to the root directory of the SD card. See picture below as an example of where the zip file resides on the SD card (E:\) directory.
   Note: Every computer will have a different drive letter designation for the SD card. Root directory represents the first location that appears when opening the SD card since the Microtech III controller cannot see files from any folders.



5. Once all the files are extracted there will be a total of 8-9 files appearing on the SD card. Total files counts can change with new software revisions. The list below show critical files needed for a software download.

   • HMI.ucf • MBRT.ucf • OBH.ucf • POL687.ucf • POL687.hex ***(omitted after 513 and 214 codes)***

   Complete list of files including all critical ones shown below



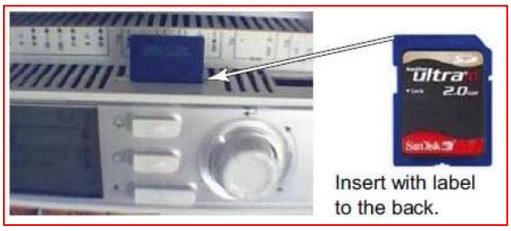
6. This completes preparing the SD card for the download process and should be now taken to the Microtech controller.

Saving Parameters to an SD Card

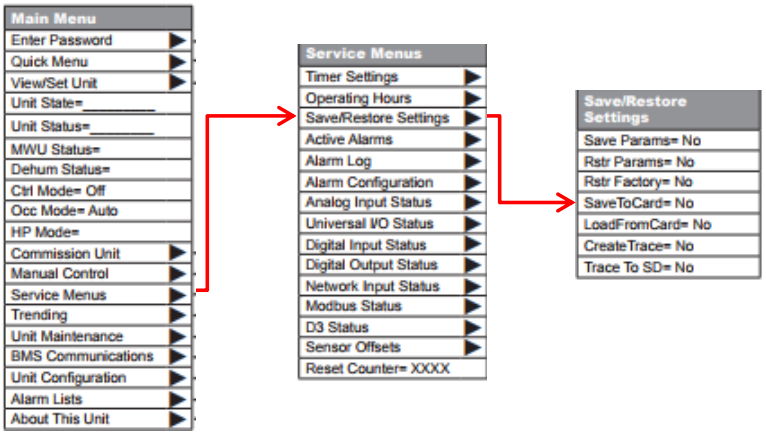
Note: DO NOT save parameters if the controller experienced a glitch in its operation and skip to the "Download Software to the Controller" section.

1. Enter the level 2 password.
2. From the Main Menu, **set the Control Mode to Off**.
3. Insert the SD memory card into the controller's memory card slot. The label on the card should be facing to the rear, toward the controller.

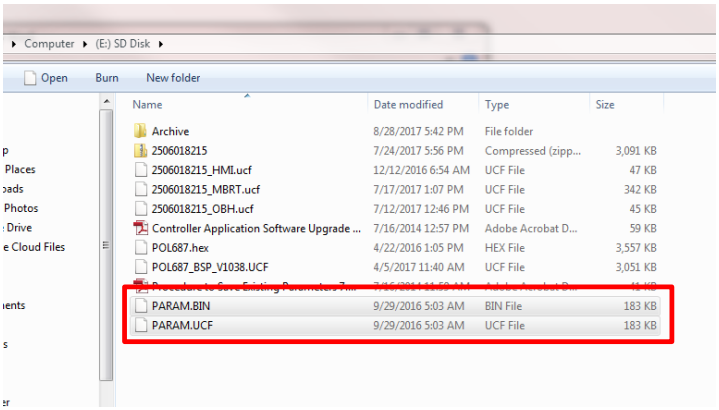
Figure 44 continued: Code Update SIL



4. Save the existing configuration and parameters to the memory card.
   a. From the Main Menu select Service Menus then Save/Restore Settings.
   b. Set SaveToCard option to “Yes” and press the Enter button. Wait till “Yes” reverts to “No”



5. Remove the SD card from the controller and inserting the SD card into the Laptop.
6. Verify 2 parameter files (Param.bin & Param.ucf) saved and their file sizes are larger than 100 KB
7. If the param file sizes are less than 100 KB then repeat step 4



8. If the files are not saving to the existing SD card then check the SD card lock or try a different SD card

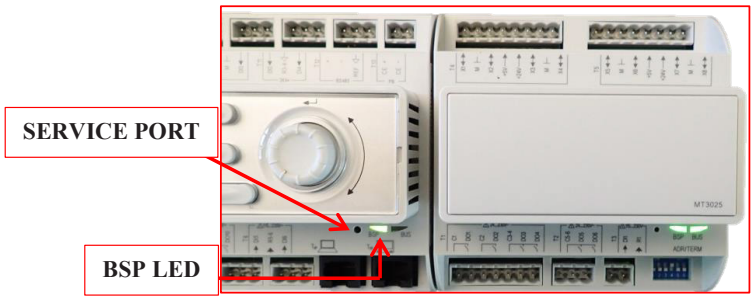
9. This completes saving parameters to the SD card

Page 3 of 9

Figure 44 continued: Code Update SIL

Downloading Software to the Controller

1. Power the controller off and wait 15 seconds
2. Make sure that all communication modules that need to be updated are connected.
3. Insert the end of a 3/64" Allen Key or other similar tool in the service port on the controller and hold the service button depressed. (The service button will "click" once depressed).



4. While holding the service button depressed, apply power to the controller.
5. Continue depressing the service button and observe the BSP LED begins to flash between red and green.
6. Release the service button after the flashing red/green sequence lasts for 3 or more seconds.
7. When the BSP LED's has stopped flashing between red and green check if the BSP LED is either off or amber. If off then repeat the download process again.
    a. **Note:** If a BMS communication module is connected to the controller, wait for the controller to automatically reset (approximately 30 seconds) before proceeding to the next step.
    b. **Note: Updating from version 8.xx BSP to 10.xx BSP firmware will require repeating the download process twice. During some software downloads, the controller display may flash blue.**
8. Cycle power to the controller after a solid amber BSP LED is present.
9. From the Main Menu scroll down to About this AHU and observe the APP version shows the same value as the zip file originally downloaded (2506017xxx or 8xxx).

Restoring Parameters to the Controller

1. Make sure the SD memory card is still within the controller's memory card slot.
2. Enter the Level 2 Password.
3. From the Main Menu select Service Menus then Save/Restore Settings.
4. Set the LoadFromCard parameter to Yes, and press the enter button.
    a. The controller will reset but may perform an additional reset if a communication module is installed.
    b. Wait 10 seconds after the main menu appears before proceeding

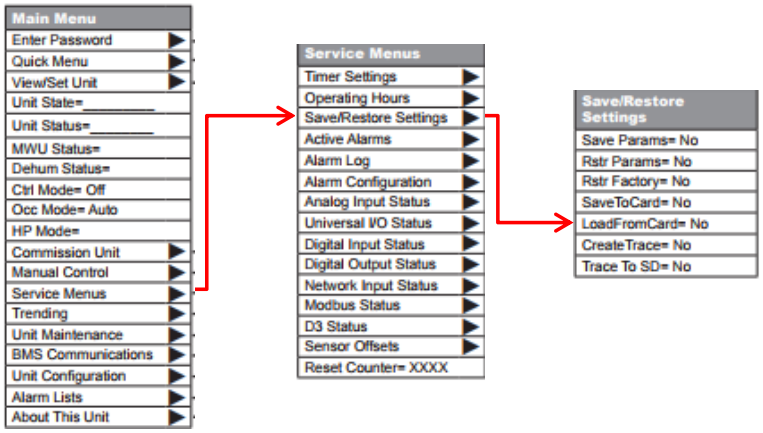
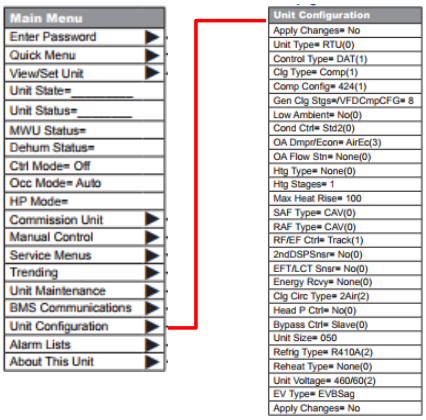


Figure 44 continued: Code Update SIL

5. From the Main Menu scroll down to About this AHU and observe the APP version has no square bracket "…]"at the end. If a square bracket appears then the parameter restore process failed and needs to be repeated.
6. Once the restore process is complete, remove the SD memory card by momentarily pushing it in and releasing to retract.
7. This completes the parameter restore from SD card process

Manually Programming the Unit Configuration

1. If a Save and Restore was not performed then setup the unit per the software configuration sticker installed on the unit door.
    a. Description of each configurator value is shown under the "Unit Configuration Menu" list below. OM 920 also contains the unit configuration menu.
2. Enter the Level 2 Password.
3. From the Main Menu select Unit Configuration.
4. Scroll through each option within the Unit Configuration menu, changing any parameters not matching the software configuration sticker on the door.



5. Once all the values under the Unit Configuration menu are confirmed, set the Apply Changes parameter to Yes and press the enter button.
6. The controller will perform an automatic reset
7. If the controller did not reset then verify the APP version for an error as mentioned under the "Restore parameters to the controller" section, step 4.
8. This completes the download and programming process.
9. Proceed with setting up individual setting to commission the unit as required for the application.

Figure 44 continued: Code Update SIL

UNIT CONFIGURATION

Configuration Code Position	Description	Values (Default in Bold)	Special Condition	RTU	MPS	DPS	DPS_H	SCU
1	Unit Type	**0=Applied Rooftop (RTU)** 1=Self-Contained (SCU) 2=Commercial Rooftop (MPS) 3=Rebel Cool Only (DPS/DAH) 4=Rebel Heat Pump (DPS_H)		•	•	•	•	•
2	Control Type	0=Zone Control **1=DAT Control** **2=1ZoneVAV**		•	•	•	•	•
3	Cooling Type	0 = None **1=Standard Compressorized Clg** 2=Chilled Water 3=F&BP 4=Variable Comp Circuit 1 5=Variable Comp Circuit 2 6=VRV 7=NA 8=NA 9=Digital Comp 1 Circuit 10=Digital Comp 2 Circuits		•	•	•	•	•
4	Compressorized Cooling Configuration	0=None 1=Generic Condenser 2=2Cmp/2Circ/3Stg 3=3Cmp/2Circ/4StgorVar (Var used for initial MPS026, 030&035 release) 4=2Cmp/2Circ/2or6StgorVar (6 stg if 7=2,3,4or5) 5=3Cmp/3Circ/3Stg_NoWRV 6=3Cmp/3Circ/3Stg_WRV 7=4Cmp/2Circ/4StgorVar 8=4Cmp/4Circ/4Stg_NoWRV 9=4Cmp/4Circ/4Stg_WRV A=6Cmp/2Circ/6StgorVar B=6Cmp/6Circ/6Stg_NoWRV C=6Cmp/6Circ/6Stg_WRV D=3Cmp/2Circ/5StgorVar E=4Cmp/2Circ/5or8StgorVar (Var used for initial MPS040) (8 stg if 7=2,3,4or5) F=8Cmp/4Circ/8Stg G=8Cmp/8Circ/8Stg H=6Cmp/3Circ/6Stg I=Not Used J=3 Cmp/3Circ/4Stg K=Spare L=1Var/1Circ M=Var/1STD/1Circ		•	•	•	•	•
5	Generic Condenser Stages	1 – 8 Stages (**default = 8**)/		•	• (if 4=4, 5or 6)	• (if 4=4, 5or 6)		
6	Low Ambient	**0 = No** 1 = Yes	This position currently has no effect on unit operation.					
7	Condenser Control	0=Std Method 1 1=Std Method 2 2=Evap ABB 3=Evap MD2		•	•	•	•	

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Figure 44 continued: Code Update SIL

		4=Evap MD3 5=Evap DF 6=Not Used 7=EBM 8=INV 9=INV w/MicroC OA Coil						
8	Damper Type	0=None 1=Single Position 30% 2=Single Position 100% **3=Economizer Airside** 4=Economizer Waterside 5=100%OA_D3 6=AirEcon_D3 7=30%_D3 8=EconoAirsideFDD 9=EconFDDD3	Values 1, 2, 5 & 7 only apply if Position 1 = 0 (RTU), 2 (MPS), 3 or 4 (DPS) Value 4 only applies if Position 1 = 1 (SCU)	•	•	•	•	•
9	OA Flow Station	**0=None** 1=DF_015-030 (800) 2=DF_036-042 (802) 3=DF_045-075 (047) 4=DF_080-135 (077) 5=Generic Flow Station 6=Generic Flow Station w/CO2		•	•	•	•	•
10	Heating Type	**0=None** 1=F&BP Control 2=Staged 3=Modulated Gas, 3-1 4=Modulated Gas 20-1 5=Steam or Hot Water 6=SCR Electric 7=MPSLoGas 8=MPSHiGas		•	•	•	•	•
11	Max Heating Stages	1-8 Stages (**Default = 1**)		•	•	•	•	•
12, 13, 14	Max Heat Rise	Three Digits (**Default = 100**)		•	•	•	•	•
15	Supply Fan Type	**0=Constant Volume** 1=VFD/ABB_BD 2=VFD/DF_BD 3=VFD/MD2_BD 4=VFD/MD3_BD 5=VFD/MD6_BD 6=EBMVAV_DD 7=EBMCAV_DD 8=ABBVAV_DD 9=ABBCAV_DD		•	•	•	•	•
16	Return Fan Type	**0=CAV** 1=RF_EF VFD/ABB 2=RF_EF VFD/DF 3=RF_EF VFD/MD2 4=RF_EF VFD/MD3 5=RF_EF VFD/MD6 6=PrpEx VFD/ABB 7=PrpEx VFD/DF 8=PrpEx VFD/MD2 9=PrpEx VFD/MD3 A=PrpEx VFD/MD6 B=None C=1StageExh D=2StageExh E=3StageExh F=EBMVAV_DD G=EBMCAV_DD H=ABBVAV_DD I=Not Used J=ABBCAV_DD		•	•	•	•	

Figure 44 continued: Code Update SIL

17	Return/Exhaust Fan Capacity Control Method	0=None **1=Tracking** 2=Building Pressure 3=Speed 4=OADamper		•	•	•	•	
18	Second Duct Pressure Sensor	**0=No** 1= Yes		•				•
19	Entering Fan Temp Sensor	**0=No** 1=Yes		•	•	•	•	
20	Energy Recovery	**0=None** 1=ConstSpdWhl/NoRH 2=VarSpdWhl/Danfoss 3=VarSpdWhl/MD2 4=VarSpdWhl/MD3 5=VarSpdWhl/ABB 6=ConstSpdWhl/wRH		•	•	•	•	
21	Cooling Circuit Type	**0=Individual** 1=2,3 or 4 Circ. Water Condenser 2=2 Circ. Air Condenser	Values 0 and 1 are valid only when Position 1 = 1 (SCU)	•	•			•
22	Head Pressure Control	**0=No** 1=Yes	This position is valid only when Position 1 = 1 (SCU).					•
23	Bypass Valve Control	**0=Slave** 1=Bypass	This position is valid only when Position 1 = 1 (SCU).					•
24, 25, 26	Unit Size	Three digits **(default 050)**		•	•	•	•	•
27	Refrigerant Type	**0=R22** 1=R407C 2=R410A		•	•	•	•	•
28	Reheat Type	**0=None** 1=StgHG 2=ModHG 3=StdHtRht 4=ModLSC 5=ModHG&LSC		•	•	•	•	
29	Unit Voltage	0=208/60Hz 1=230/60Hz **2=460/60Hz** 3=575/60Hz 4=208/50Hz 5=230/50Hz 6=460/50Hz 7=575/50Hz		•	•	•	•	•
30	EVType	0=None 1=EVB_Sag 2=EVB_DF 3=MTIII_Sag 4=MTIII_DF 5=MTIII_Sag_DF 6=MTIII_DF_Sag 7=MTIII_DF_C				•	•	

Figure 44 continued: Code Update SIL

For questions about the procedure please contact the Technical Response team at:
TechresponseAAH@daikinapplied.com or 844-521-3928

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Appendix D

Table 6: ACS320 and ACH550 Parameters

MD4 Parameters		Unit	RoofPak & Self C	DPS 016–028 MPS 015–050	DPS 016–028 MPS 015–050	RPS / RDT / RCS	RPE / RDE	RoofPak	Maverick II & Rebel
#	Name		SAF, RAF & EAF	SAF	EAF	Condenser Fan	Condenser Fan	Energy Rec Wheel	Energy Rec Wheel
9802	COMM PROT SEL		STD MODBUS	STD MODBUS	STD MODBUS	Not Selected	STD MODBUS	STD MODBUS	STD MODBUS
9901	LANGUAGE		ENGLISH	ENGLISH	ENGLISH	ENGLISH	ENGLISH	ENGLISH	ENGLISH
9902	APPLIC MARCO		HVAC DEFAULT	HVAC DEFAULT	HVAC DEFAULT	HVAC DEFAULT	HVAC DEFAULT	HVAC DEFAULT	HVAC DEFAULT
9905	MOTOR NOM VOLT	V	460	460	460	460	460	460	460
9906	MOTOR NOM CURR	A	35	24	4	2.6	11.2	1.1	0.5
9907	MOTOR NOM FREQ	Hz	60	60	60	60	60	60	60
9908	MOTOR NOM SPEED	rpm	1775	1775	1140	1142	1775	1775	1775
9909	MOTOR NOM POWER	hp	30	20	3	1.5	5	1	0.2
1001	EXT1 COMMANDS		COMM	COMM	COMM	DI1	COMM	COMM	COMM
1102	EXT1/EXT2 SEL		EXT1	EXT1	EXT1	EXT1	EXT1	EXT1	EXT1
1103	REF1 SELECT		COMM	COMM	COMM	AI 1	COMM	COMM	COMM
1104	REF1 MIN	Hz	0	0	0	24	0	0	0
1105	REF1 MAX	Hz	60	60	60	60	60	60	60
1106	REF2 SELECT		KEYPAD	KEYPAD	KEYPAD	KEYPAD	KEYPAD	KEYPAD	KEYPAD
1201	CONST SPEED SEL		NOT SEL	NOT SEL	NOT SEL	DI 3	NOT SEL	NOT SEL	NOT SEL
1601	RUN ENABLE		COMM	COMM	COMM	DI 2	COMM	COMM	COMM
1604	FAULT RESET SEL		COMM	COMM	COMM	KEYPAD	COMM	COMM	COMM
1607	PARAM SAVE		DONE	DONE	DONE	DONE	DONE	DONE	DONE
1608	START ENABLE 1		COMM	COMM	COMM	DI 4	NOT SEL	COMM	COMM
1611	PARAMETER VIEW		LONG VIEW	LONG VIEW	LONG VIEW	LONG VIEW	LONG VIEW	LONG VIEW	LONG VIEW
2101	START FUNCTION		SCAN START	SCAN START	SCAN START	SCAN START	SCAN START	SCAN START	SCAN START
2202	ACCELER TIME 1	s	60	60	60	10	5	60	60
2203	DECELER TIME 1	s	60	60	60	10	30	60	60
2605	U/F RATIO		LINEAR	LINEAR	LINEAR	LINEAR	LINEAR	LINEAR	LINEAR
3003	EXTERNAL FAULT 1		DI 2(INV)	NOT SEL	NOT SEL	NOT SEL	NOT SEL	NOT SEL	NOT SEL
3009	BREAK POINT FREQ	Hz	45	45	45	45	45	45	45
3101	NUMBER TRIALS		5	5	5	5	5	5	5
3103	DELAY TIME	s	3	3	3	3	3	3	3
3104	AR OVERCURRENT		ENABLE	ENABLE	ENABLE	DISABLE	ENABLE	ENABLE	ENABLE
3404	OUTPUT1 DSP FORM		DIRECT	DIRECT	DIRECT	+0.0	+0.0	DIRECT	DIRECT
3405	OUTPUT1 UNIT		%	Hz	Hz	% SP	Hz	Hz	Hz
3415	SIGNAL3 PARAM		AI 1	SPEED	SPEED	AI 1	SPEED	SPEED	SPEED
3418	OUTPUT3 DSP FORM		+0.0	DIRECT	DIRECT	+0.0	DIRECT	DIRECT	DIRECT
3421	OUTPUT3 MAX		44ma	1800 rpm	1800 rpm	10v	1800rpm	1800 rpm	1800 rpm
4201	GAIN		The Daikin software version [will grow over time]						
4202	INTEGRATION TIME	s	279	252	228	106	103	202	204
5302	EFB STATION ID		SAF=1,R/EAF=2	1	2	1	4	3	3
5303	EFB BAUD RATE		192	192	192	96	192	192	192
5304	EFP PARITY		8 NONE 2	8 NONE 2	8 NONE 2	Values Vary	8 NONE 2	8 NONE 2	8 NONE 2
5306	EFB OK MESSAGES		Usually a big number that continues to grow						
5307	EFB CRC ERRORS		0	0	0	0	0	0	0
5308	EFB UART ERRORS		Should be a small number that rarely grows unless a MicroTech III communication problem occurred						
5309	EFB STATUS		ON-LINE	ON-LINE	ON-LINE	ON-LINE	ON-LINE	ON-LINE	ON-LINE
8120	INTERLOCKS		NOT SEL	NOT SEL	NOT SEL	DI 4	NOT SEL	NOT SEL	NOT SEL
1002	EXT2 COMMANDS		NOT SEL	NOT SEL	NOT SEL	DI 1	NOT SEL	NOT SEL	NOT SEL
1301	MINIMUM AI1	%	MicroTech III limits minimum speed to 20 hz			10	MicroTech III limits minimum speed to 20 hz		
1302	MAXIMUM AI1	%	MicroTech III limits maximum speed to 60 hz			50	MicroTech III limits maximum speed to 60 hz		
1303	FILTER AI1	s				0.1			
3502	INPUT SELECTION					A I 1			
4210	SET POINT SEL					AI 1			
1202	CONST SPEED 1	Hz				60			
1401	RELAY OUTPUT 1					FAULT			

Vary depending on motor nameplate voltage and hp
These values vary depending on the application
Not important, will be HVAC default values

Table 7: ACH580 Parameters

MD5 Parameters

	# Name	Unit	VALUE
GROUP 96 - SYSTEM			
	96.04 MACRO SELECT		HVAC DEFAULT
GROUP 99 - MOTOR DATA			
	99.06 MOTOR NOM CURR	A	Motor Specific
	99.07 MOTOR NOM VOLT	V	Motor Specific
	99.09 MOTOR NOM SPEED	RPM	Motor Specific
	99.10 MOTOR NOM POWER	HP	Motor Specific
GROUP 12 - STANDARD AI			
	12.15 AI1 UNIT SELECTION		MA
	12.19 AI1 SCALED ATAI1 MIN		200
	12.20 AI1 SCALED AT AI1 MAX		1000
	12.25 AI2 UNIT SELECTION		MA
	12.29 AI2 SCALED AT AI2 MIN		200
	12.30 AI2 SCALED AT AI2 MAX		1000
GROUP 20 - START/STOP/DIR			
	20.01 EXT1 COMMANDS		EMBEDDED FIELDBUS
	20.21 DIRECTION		FORWARD
	20.41 START INTERLOCK 1		NOT USED
	20.42 START INTERLOCK 2		NOT USED
GROUP 22 - REFERENCE SELECT			
	22.11 EXT SPEED REF1		EFB REF1
	22.22 CONSTANT SPEED SEL1		ALWAYS OFF
	22.41 SPEED REF SAFE	RPM	0
GROUP 28 - FREQUENCY REFERENCE CHAIN			
	28.11 EXT1 FREQUENCY REF1		EFB REF1
	28.22 CONSTANT FREQ SEL1		ALWAYS OFF
	28.41 FREQUENCY REF SAFE	Hz	0
	28.72 FREQ ACCELERATION TIME 1	S	60
	28.73 FREQ DECELERATION TIME 1	S	60
GROUP 31 - FAULT FUNCTIONS			
	31.01 External Event 1 Source		DI2
	31.14 NUMBER OF TRIALS		5
	31.16 DELAY TIME	S	3
	31.27 STALL FREQUENCY LIMIT	Hz	45
	31.25 AR OVERCURRENT		ENABLE
GROUP 46 - MONITOR / SCALING SETTINGS			
	46.02 FREQUENCY SCALING		1000
GROUP 58 - EMBEDDED FILEDBUS			
	58.01 PROTOCOL ENABLE		MODBUS RTU
	58.03 NODE ADDRESS		1 (SAF) or 2 (RF/EF)
	58.04 BAUD RATE		19.2 KBPS
	58.05 PARITY		8 NONE 2
	58.14 COMMUNICATION LOSS ACTION		SPEED REF SAFE
	58.15 COMMUNICATION LOSS MODE		CW/REF1/REF2
	58.16 COMMUNICATION LOSS TIME	S	25.0 S
	58.33 ADDRESSING MODE		MODE0
	58.06 Communication Control		Enabled
GROUP 71 - EXTERNAL PID1			
	71.32 GAIN		1.00
	71.33 INTEGRATION TIME	S	2155
GROUP 97 - MOTOR CONTROL			
	97.20 U/F RATIO		LINEAR

Appendix E

Figure 45: Parameters

	On the PC exactly…	Appears as…				
Parameter	**MCT 10 Noun**	**MCT 10 value**	**Keypad Menu-then drop**	**Keypad Noun**	**Keypad Value**	**Comments**
0-03	Regional Settings	North America	start at 0-0* Basic Settings	0-03 Regional Settings	[1] North America	Required change to allow many 60 Hz settings
1-21	Motor Power [HP]	enter dataplate value	start at 1-** Load and Motor	1-21 Motor Power [HP]	enter dataplate value	**FACTORY ENTER**
1-22	Motor Voltage	enter dataplate value	start at 1-** Load and Motor	1-22 Motor Voltage	enter dataplate value	**FACTORY ENTER**
1-23	Motor Frequency	60Hz	start at 1-** Load and Motor	1-23 Motor Frequency	60Hz	Almost always 60 Hz
1-25	Motor Nominal Speed	1760	start at 1-** Load and Motor	1-25 Motor Nominal Speed	1760	1760 is close, motor nameplate may be different.
1-73	Flying Start	Enabled	start at 1-** Load and Motor	1-73 Flying Start	[1] Enabled	
3-02	Minimum Reference	00.00	start at 3-0* Reference Limits	3-02 Minimum Reference	00.000	Modbus comms controls the lowest motor speed.
3-04	Reference Function	Sum	start at 3-0* Reference Limits	3-04 Reference Function	[0] Sum	Sum of all presets-Writes via modbus to parameter 3-10. Others will be zero.
3-15	Reference 1 Source	No Function	start at 3-1* References	3-15 Reference 1 Source	[0] No function	Duct Static P1: Signal between 53 & 55. Set switch A53 to ON for ma.
3-16	Reference 2 Source	No Function	start at 3-1* References	3-16 Reference 2 Source	[0] No Function	Duct Static P2: Signal between 54 & 55. Set switch A54 to ON for ma.
3-17	Reference 3 Source	No Function	start at 3-1* References	3-17 Reference 3 Source	[0] No Function	
3-41	Ramp 1 Ramp Up Time	60.00	start at 3-4* Ramp 1	3-41 Ramp 1 Ramp Up Time	60.00s	
3-42	Ramp 1 Ramp Down Time	60.00	start at 3-4* Ramp 1	3-42 Ramp 1 Ramp Down Time	60.00s	
5-01	Terminal 27 Mode	Input	start at 5-00 Digital I/O mode	5-01 Terminal 27 mode	[0] Input	Contacts between 27 and 12.
5-02	Terminal 29 Mode	Output	start at 5-00 Digital I/O mode	5-02 Terminal 27 mode	[1] Output	If not [1] then 5-31 is locked-out.
5-12	Terminal 27 Digital Input	External Interlock	start at 5-1* Digital Inputs	5-12 Terminal 27 Digital Input	[7] External Interlock	
5-14	Terminal 32 Digital Input	Fire Mode	start at 5-1* Digital Inputs	5-14- Terminal 32 Digital Input	[37] Fire Mode	
5-15	Terminal 33 Digital input	No Operation	start 5-1* Digital Inputs	5-15 Terminal 33 Digital Input	[0] No Operation	
5-31	Terminal 29 Digital Output	No Operation	start 5-3* Digital Outputs	5-31 Terminal 29 Digital Output	[60] Comparator 0	Must set 5-02 first, then 13-10, 13-11, and 13-12, then 5-31 last.
8-30	Protocol	FC (required for write to drive)	start at 8-3* FC Port Settings	8-30 Protocol	[2] RTU Modbus	Change via keypad, power cycle required. Wired +@#68, -@ #69, Shield at #61
8-31	Address	1 (found at default)	start at 8-3* FC Port Settings	8-31 Address	[1]SAF,[2]RAF,[3]EXH	Change via keypad, power cycle required. Choose MT3 address of VFD to be controlled
8-32	Baud rate	9600 Baud (found at default)	start at 8-3* FC Port Settings	8-32 Baud rate	[3] 19200 Baud	Change via keypad, power cycle required. 19,200 required for MT3 coms
8-33	Parity / Stop Bits	Even Parity,1 Stop Bit (at default)	start at 8-3* FC Port Settings	8-33 Parity, Stop Bits	[3] No Parity, 2 Stop Bits	Change via keypad, power cycle required. Required for MT3 comms
8-35	Minimum Response Delay	need to enter new value = 100	start at 8-3* FC Port Settings	8-35 Minimum Response Delay	100ms	MT3 best operation this setting
8-50	Protocol	Logic OR (default)	8-50* Digital Bus	8-50 Coasting Select	[3] Logic OR	MT3 best operation this setting
8-53	Start Select	Logic OR (default)	8-50* Digital Bus	8-53 Start Select Logic OR	[3] Logic OR	Modbus OR Input 53
13-10.00	Comparator Operand	Alarm Number	Comparators-1 13-1*	13-10 Comparator Operand	[20] Alarm Number	Set 5-02 first, then 13-10, then 13-11 next
13-11.0	Comparator Operator	(equal)	Comparators-1 13-1*	13-11 Comparator Operator	[1] = (equal)	Set 13-10 first, then 13-11, then 13-12 next
13-12.0	Comparator Value	60.000	Comparators-1 13-1*	13-12 Comparator Value	60.000	Set 13-11 first, then 13-12, then 5-31 last
Switch- TERM.		Set to IN at highest address of 8-31			Set to IN at highest address of 8-31	
Switch A53		set to = I			set to = I	Switch is behind keypad.
Switch A54		set to = I			set to = I	Switch is behind keypad.

IMPORTANT NOTES: **Technical assistance from Danfoss 414-365-8639, cell 414-704-8997; Ken Fonstad or others.**

"Numeric" keypads only display the parameter value as a number, it is not followed by words as the "Graphical" keypad displays.

Yellow shaded parameters are unique to MT3 controls and MODBUS communications

Light Green shaded parameters are general in nature, some are FACTORY set from motor dataplate values.

Danfoss FC102 drives are configured for FC port communications "out of the box". Use a PC and the MCT 10 software which performs a WRITE to DRIVE that downloads all except the Modbus communications parameters into the drive. Additional instructions are

Change the Communication parameters 8-30, 8-31, 8-32, & 8-33 with the keypad. Cycle the power.

If unit will not communicate, FC102 terminals 68 & 69 might be accidently exchanged.

Keypad Password access parameters are 0-60, 0-61, 0-65 & 0-66. Full Access is normal. Graphic keypads can "transport" parameters to other drives. Use parameter 0-50 = [2] Copt All From LCP. Use 0-50 = [1] to Copt All TO LCP. Numeric keypads cannot do this copy operation..

P:\Engineering\ENG_data\AFD PARAMETER SOURCE FILES\170632800.xls
MT3 FC102 All Modbus

Appendix F

Figure 46: ATV 212 (MD2) Drive Parameters

PART NUMBER		REV	PART DESCRIPTION				
170632000		B	Rooftop - MT3 SAF (set 321) PARAMETERS				
			Drive	Voltage	HP	Application	
			ATV21	ALL	ALL	SAF/RAF, RT/SC	
Code	Function Description	Unit	Min. Value	Max. Value	Default Value	New Value	Logical Address
AU1	Automatic acceleration/deceleration	1	0	2	1	**0**	0
AU4	Automatic function setting	1	0	4	0	**1**	40
CMOd	Command mode selection	1	0	2	0	**2**	3
FMOd	Frequency setting mode selection 1	1	1	5	1	**4**	4
FMSL	Meter selection	1	0	19	0		5
FM	Meter adjustment	1	1	1280	145	**318**	6
tyP	Default setting	1	0	9	0	**7**	7
Fr	Forward/reverse run selection (Operation panel)	1	0	3	0		8
ACC	Acceleration time 1	0.1sec	0,0	3200,0	10	**60**	9
DEC	Deceleration time 1	0.1sec	0,0	3200,0	10	**60**	10
FH	Maximum frequency	0.01Hz	30,00	200,00	50	**60**	11
UL	Upper limit frequency	0.01Hz	0,50	80,00	50	**60**	12
LL	Lower limit frequency	0.01Hz	0,00	60,00	0	**20**	13
vL	Base frequency 1	0.01Hz	25,00	200,00	50	**60**	14
vLv	Base frequency voltage 1	0.1V	50,0	660,0		**McQuay load**	409
Pt	V/F control mode selection 1	1	0	6	1		15
vb	Torque boost 1	0.10%	0,0	30,0	5		16
tHr	Motor electronic-thermal protection level 1	1%	10	100	100		600
OLM	Electric-thermal protection characteristic selection	1	0	7	0	**1**	17
Sr1	Preset-speed operation frequency 1	0.01Hz	0,00	60,00	15		18
Sr2	Preset-speed operation frequency 2	0.01Hz	0,00	60,00	20		19
Sr3	Preset-speed operation frequency 3	0.01Hz	0,00	60,00	25		20
Sr4	Preset-speed operation frequency 4	0.01Hz	0,00	60,00	30		21
Sr5	Preset-speed operation frequency 5	0.01Hz	0,00	60,00	35		22
Sr6	Preset-speed operation frequency 6	0.01Hz	0,00	60,00	40		23
Sr7	Preset-speed operation frequency 7	0.01Hz	0,00	60,00	45		24
F100	Low-speed signal output frequency	0.01Hz	0,00	80,00	0		100
F101	Speed reach setting frequency	0.01Hz	0,00	80,00	0		101
F102	Speed reach detection band	0.01Hz	0,00	80,00	2.5		102
F108	2nd always-active function selection	1	0	71	0		108
F109	Analog/contact input function selection (VIA/VIB)	1	0	2	0		109
F110	Always-active function selection	1	0	71	1		110
F111	Input terminal selection1 (F)	1	0	71	2	**45**	111
F112	Input terminal selection 2 (R)	1	0	71	6	**0**	112
F113	Input terminal selection 3 (RST)	1	0	71	10		113
F118	Input terminal selection 8 (VIA)	1	0	71	7		118
F130	Output terminal selection 1A (RY-RC)	1	0	255	4	**14**	130
F132	Output terminal selection 3 (FL)	1	0	255	11		132
F137	Output terminal selection 1B (RY-RC)	1	0	255	255		137
F139	Output terminal logic selection (RY-RC/OUT-NO)	1	0	1	0		139
F167	Frequency command agreement detection range	0.01Hz	0,00	80,00	2.5		167
F170	Base frequency 2	0.01Hz	25,00	200,00	50	**60**	170
F171	Base frequency voltage 2	0.1V	50,0	660,0			171
F172	Torque boost 2	0.10%	0,0	30,0	5		172
F173	Motor electronic-thermal protection level 2	1%	10	100	100		173
F185	Stall prevention level 2	1%	10	111	110		185
F200	Frequency priority selection	1	0	1	0		200
F201	VIA input point 1 setting	1%	0	100	0		201
F202	VIA input point 1 frequency	0.01Hz	0,00	200,00	0		202
F203	VIA input point 2 setting	1%	0	100	100		203
F204	VIA input point 2 frequency	0.01Hz	0,00	200,00	50		204

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Figure 46 continued: ATV 212 (MD2) Drive Parameters

PART NUMBER		REV	PART DESCRIPTION				
170632000		B	Rooftop - MT3 SAF (set 321) PARAMETERS				
			Drive	Voltage	HP	Application	
			ATV21	ALL	ALL	SAF/RAF, RT/SC	
Code	Function Description	Unit	Min. Value	Max. Value	Default Value	New Value	Logical Address
F207	Frequency setting mode selection 2	1	1	5	2		207
F210	VIB input point 1 setting	1%	0	100	0		210
F211	VIB input point 1 frequency	0.01Hz	0,00	200,00	0		211
F212	VIB input point 2 setting	1%	0	100	100		212
F213	VIB input point 2 frequency	0.01Hz	0,00	200,00	50		213
F240	Starting frequency setting	0.01Hz	0,50	10,00	0.5		240
F241	Operation starting frequency	0.01Hz	0,00	80,00	0		241
F242	Operation starting frequency hysteresis	0.01Hz	0,00	80,00	0		242
F250	DC braking starting frequency	0.01Hz	0,00	80,00	0		250
F251	DC braking current	1%	0	100	50		251
F252	DC braking time	0.1sec	0,0	20,0	1		252
F256	Time limit for lower-limit frequency operation	0.1sec	0,0	600,0	0		256
F264	Input from external contacts-UP response time	0.1sec	0,0	10,0	0.1		264
F265	Input from external contacts-UP frequency step width	0.01Hz	0,00	80,00	0.1		265
F266	Input from external contacts-DOWN response time	0.1sec	0,0	10,0	0.1		266
F267	Input from external contacts-DOWN freq step width	0.01Hz	0,00	80,00	0.1		267
F268	Initial value of UP/DOWN frequency	0.01Hz	0,00	60,00	0	**20**	268
F269	Saving of changed value of UP/DOWN frequency	1	0	1	1		269
F270	Jump frequency 1	0.01Hz	0,00	80,00	0		270
F271	Jump width 1	0.01Hz	0,00	30,00	0		271
F272	Jump frequency 2	0.01Hz	0,00	80,00	0		272
F273	Jump width 2	0.01Hz	0,00	30,00	0		273
F274	Jump frequency 3	0.01Hz	0,00	80,00	0		274
F275	Jump width 3	0.01Hz	0,00	30,00	0		275
F294	Preset-speed operation frequency 15	0.01Hz	0,00	60,00	50		294
F295	Selection of bumpless	1	0	1	1		295
F300	PWM carrier frequency	0.1kHz	6,0	16,0			300
F301	Auto-restart control selection	1	0	4	3		301
F302	Regeneration power ride-through control (Deceleration stc	1	0	2	0		302
F303	Retry selection (number of times)	1	0	10	3	**5**	303
F305	Over-voltage limit operation (Slowdown stop mode selecti	1	0	3	2		305
F307	Supply voltage correction (limitation of output voltage)	1	0	3	3		307
F311	Reverse-run prohibition	1	0	2	1		311
F312	Random mode	1	0	1	0		312
F316	Carrier frequency control mode selection	1	0	3	1		316
F320	Drooping gain	1%	0	100	0		320
F323	Drooping insensitive torque band	1%	0	100	10		323
F359	PID control waiting time	1sec	0	2400	0		359
F360	PID control	1	0	2	0		360
F362	Proportional gain	0.01	0,01	100,00	0.3		362
F363	Integral gain	0.01	0,01	100,00	0.2		363
F366	Differential gain	0.01	0,00	2,55	0		366
F400	Auto-tuning	1	0	2	0		400
F401	Slip frequency gain	1%	0	150	50		401
F402	Motor constant #1 (primary resistance)	0.10%	0,0	30,0			402
F415	Motor rated current	0.1A	0,1	200,0			415
F416	Motor no-load current	1%	10	100			416
F417	Motor rated speed	1min-1	100	15000			417
F418	Speed control response coefficient	1	1	150	40		418
F419	Speed control stability coefficient	1	1	100	20		419
F470	VIA bias	1	0	255	128		470

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Figure 46 continued: ATV 212 (MD2) Drive Parameters

PART NUMBER		REV	PART DESCRIPTION				
170632000		B	Rooftop - MT3 SAF (set 321) PARAMETERS				
			Drive	Voltage	HP	Application	
			ATV21	ALL	ALL	SAF/RAF, RT/SC	
Code	Function Description	Unit	Min. Value	Max. Value	Default Value	New Value	Logical Address
F471	VIA gain	1	0	255	148		471
F472	VIB bias	1	0	255	128		472
F473	VIB gain	1	0	255	148		473
F480	Exciting strengthening coefficient	1%	100	130	100		480
F481	Factory adjustment 1	1	0	9999	0		481
F482	Factory adjustment2	1	0	9999	442		482
F483	Factory adjustment3	0.1	0,0	300,0	100		483
F485	Stall cooperation gain at field weakening zone 1	1	10	250	100		485
F492	Stall cooperation gain at field weakening zone 2	1	50	150	100		492
F494	Motor adjustment factor	1	0	200	70		494
F495	Maximum voltage adjustment factor	1%	90	120	104		495
F496	Carrier change adjustment factor	0.1kHz	0,1	14,0	14		496
F500	Acceleration time 2	0.1sec	0,0	3200,0	20		500
F501	Deceleration time 2	0.1sec	0,0	3200,0	20		501
F502	Acceleration/deceleration 1 pattern	1	0	2	0		502
F503	Acceleration/deceleration 2 pattern	1	0	2	0		503
F504	Acceleration/deceleration selection (1/2/3)	1	1	2	1		504
F505	Acceleration/deceleration 1 and 2 switching frequency	0.01Hz	0,00	60,00	0		505
F506	S-pattern lower-limit adjustment amount	1%	0	50	10		506
F507	S-pattern upper-limit adjustment amount	1%	0	50	10		507
F601	Stall prevention level 1	1%	10	111	110		601
F602	Inverter trip retention selection	1	0	1	0		602
F603	Emergency stop selection	1	0	2	0		603
F604	Emergency DC braking time	0.1sec	0,0	20,0	1		604
F605	Output phase failure detection mode selection	1	0	5	3	**5**	605
F607	Motor 150%-overload time limit	1sec	10	2400	300		607
F608	Input phase failure detection mode selection	1	0	1	1		608
F609	Hysteresis for small current detection	1%	1	20	10		609
F610	Low current trip/alarm	1	0	1	0		610
F611	Small current detection current	1%	0	100	0		611
F612	Small current detection time	1sec	0	255	0		612
F613	Detection of output short-circuit during start-up	1	0	3	0		613
F615	Over-torque trip/alarm selection	1	0	1	0		615
F616	Over-torque detection level	1%	0	250	130		616
F618	Over-torque detection time	0.1sec	0,0	10,0	0.5		618
F619	Over-torque detection level hysteresis	1%	0	100	10		619
F621	Cumulative operation time alarm setting	0.1	0,0	999,9	610		621
F626	Over-voltage stall protection level	1%	100	150	140		626
F627	Under-voltage trip/alarm selection	1	0	2	0		627
F632	Thermal memory selection	1	0	1	0		632
F633	Trip at VIA low level input mode	1%	0	100	0		633
F634	Annual avg ambient temp (calculation for life alarms)	1	1	6	3		634
F645	Selection of PTC thermal	1	0	2	0		645
F646	Detection level of PTC	1ohm	100	9999	3000		646
F650	Rorced/Fire-speed control selection	1	0	1	0		650
F691	Inclination characteristic of analog output	1	0	1	1		691
F692	Meter bias	1%	0	100	0		692
F700	Prohibition of change of parameter settings	1	0	1	0		700
F701	Unit selection	1	0	1	1		701
F702	Free unit selection	0.01	0,00	200,00	0		702
F705	Inclination characteristic of free unit display	1	0	1	1		705

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Figure 46 continued: ATV 212 (MD2) Drive Parameters

PART NUMBER		REV	PART DESCRIPTION				
170632000		B	Rooftop - MT3 SAF (set 321) PARAMETERS				
			Drive	Voltage	HP	Application	
			ATV21	ALL	ALL	SAF/RAF, RT/SC	
Code	Function Description	Unit	Min. Value	Max. Value	Default Value	New Value	Logical Address
F706	Free unit display bias	0.01Hz	0,00	80,00	0		706
F707	Free step 1 (pressing a panel key once)	0.01Hz	0,00	80,00	0		707
F708	Free step 2 (panel display)	1	0	255	0		708
F710	Standard monitor display selection	1	0	10	0		710
F721	Panel stop pattern	1	0	1	0		721
F730	Prohibition of freq. setting on the operation panel (FC)	1	0	1	0		730
F732	Panel operation prohibition (Local/Remote keys)	1	0	1	0	**1**	732
F733	Panel operation prohibition (RUN/STOP keys)	1	0	1	0		733
F734	Prohibition of panel emergency stop operation	1	0	1	0		734
F735	Prohibition of panel reset operation	1	0	1	0		735
F738	Selection of AUF	1	0	1	0		738
F748	Selection of watt hour memory	1	0	1	1		748
F749	Display unit selection of watt hour	1	0	3	0		749
F800	Communication band speed	1	0	1	1		800
F801	Parity	1	0	2	1	**=0; McQuay**	801
F802	Inverter number; SAF=1;RAF=2;HW=3	1	0	247	1	**=1;McQuay**	802
F803	Communication error trip time	1sec	0	100	3	**10**	803
F805	Communication waiting time	0.01sec	0,00	2,00	0		805
F806	Setting master & slave for comm between inverters	1	0	4	0		806
F811	Communication input point 1 setting	1%	0	100	0		811
F812	Communication input point 1 frequency	0.01Hz	0,00	200,00	0		812
F813	Communication input point 2 setting	1%	0	100	100		813
F814	Communication input point 2 frequency	0.01Hz	0,00	200,00	0	**=60;McQuay**	814
F829	Selection of communication protocol	1	0	4	1		829
F851	Inverter action at network & communication break	1	0	4	4	**0**	851
F856	Number of motor poles for comm speed calculation	1	1	8	2		856
F870	Block write data 1	1	0	6	0		870
F871	Block write data 2	1	0	6	0		871
F875	Block read data 1	1	0	11	0		875
F876	Block read data 2	1	0	11	0		876
F877	Block read data 3	1	0	11	0		877
F878	Block read data 4	1	0	11	0		878
F879	Block read data 5	1	0	11	0		879
F880	Free notes	1	0	65535	0	**321**	880
F890	Parameter for option 1	1	0	65535	0		890
F891	Parameter for option 2	1	0	65535	0		891
F892	Parameter for option 3	1	0	65535	0		892
F893	Parameter for option 4	1	0	65535	0		893
F894	Parameter for option 5	1	0	65535	0		894
F895	Parameter for option 6	1	0	65535	0		895
F896	Parameter for option 7	1	0	65535	0		896
F897	Parameter for option 8	1	0	65535	0		897
F898	Parameter for option 9	1	0	65535	0		898
F899	Parameter for option 10	1	0	65535	0		899
F910	Step-out detection current level (for PM motors)	1%	10	150	100		910
F911	Step-out detection time (for PM motors)	0.1sec	0,0	25,0	0.0		911
F912	q-axis self-inductance (for PM)	0.01mH	0,00	650,00	0.00		912

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Figure 46 continued: ATV 212 (MD2) Drive Parameters

PART NUMBER		REV	PART DESCRIPTION				
170632000		B	Rooftop - MT3 SAF (set 321) PARAMETERS				
			Drive	Voltage	HP	Application	
			ATV21	ALL	ALL	SAF/RAF, RT/SC	
Code	Function Description	Unit	Min. Value	Max. Value	Default Value	New Value	Logical Address
F706	Free unit display bias	0.01Hz	0,00	80,00	0		706
F707	Free step 1 (pressing a panel key once)	0.01Hz	0,00	80,00	0		707
F708	Free step 2 (panel display)	1	0	255	0		708
F710	Standard monitor display selection	1	0	10	0		710
F721	Panel stop pattern	1	0	1	0		721
F730	Prohibition of freq. setting on the operation panel (FC)	1	0	1	0		730
F732	Panel operation prohibition (Local/Remote keys)	1	0	1	0	**1**	732
F733	Panel operation prohibition (RUN/STOP keys)	1	0	1	0		733
F734	Prohibition of panel emergency stop operation	1	0	1	0		734
F735	Prohibition of panel reset operation	1	0	1	0		735
F738	Selection of AUF	1	0	1	0		738
F748	Selection of watt hour memory	1	0	1	1		748
F749	Display unit selection of watt hour	1	0	3	0		749
F800	Communication band speed	1	0	1	1		800
F801	Parity	1	0	2	1	**=0; McQuay**	801
F802	Inverter number; SAF=1;RAF=2;HW=3	1	0	247	1	**=1;McQuay**	802
F803	Communication error trip time	1sec	0	100	3	**10**	803
F805	Communication waiting time	0.01sec	0,00	2,00	0		805
F806	Setting master & slave for comm between inverters	1	0	4	0		806
F811	Communication input point 1 setting	1%	0	100	0		811
F812	Communication input point 1 frequency	0.01Hz	0,00	200,00	0		812
F813	Communication input point 2 setting	1%	0	100	100		813
F814	Communication input point 2 frequency	0.01Hz	0,00	200,00	0	**=60;McQuay**	814
F829	Selection of communication protocol	1	0	4	1		829
F851	Inverter action at network & communication break	1	0	4	4	**0**	851
F856	Number of motor poles for comm speed calculation	1	1	8	2		856
F870	Block write data 1	1	0	6	0		870
F871	Block write data 2	1	0	6	0		871
F875	Block read data 1	1	0	11	0		875
F876	Block read data 2	1	0	11	0		876
F877	Block read data 3	1	0	11	0		877
F878	Block read data 4	1	0	11	0		878
F879	Block read data 5	1	0	11	0		879
F880	Free notes	1	0	65535	0	**321**	880
F890	Parameter for option 1	1	0	65535	0		890
F891	Parameter for option 2	1	0	65535	0		891
F892	Parameter for option 3	1	0	65535	0		892
F893	Parameter for option 4	1	0	65535	0		893
F894	Parameter for option 5	1	0	65535	0		894
F895	Parameter for option 6	1	0	65535	0		895
F896	Parameter for option 7	1	0	65535	0		896
F897	Parameter for option 8	1	0	65535	0		897
F898	Parameter for option 9	1	0	65535	0		898
F899	Parameter for option 10	1	0	65535	0		899
F910	Step-out detection current level (for PM motors)	1%	10	150	100		910
F911	Step-out detection time (for PM motors)	0.1sec	0,0	25,0	0.0		911
F912	q-axis self-inductance (for PM)	0.01mH	0,00	650,00	0.00		912

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Appendix G

Figure 47: Danfoss VFD Wiring

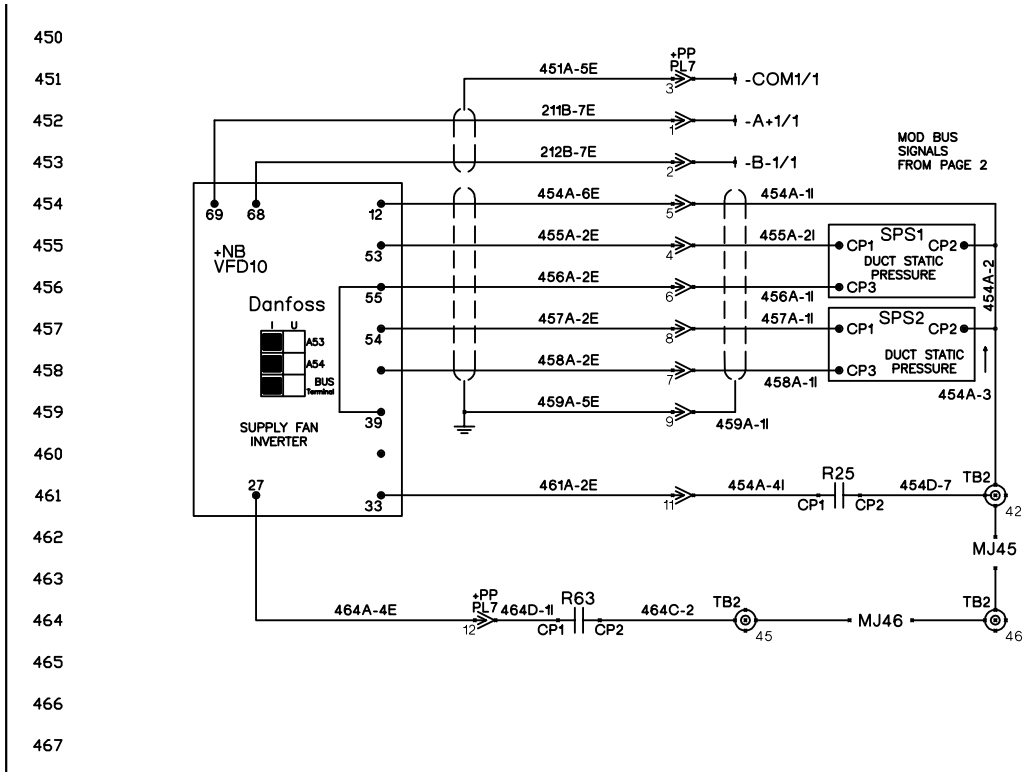
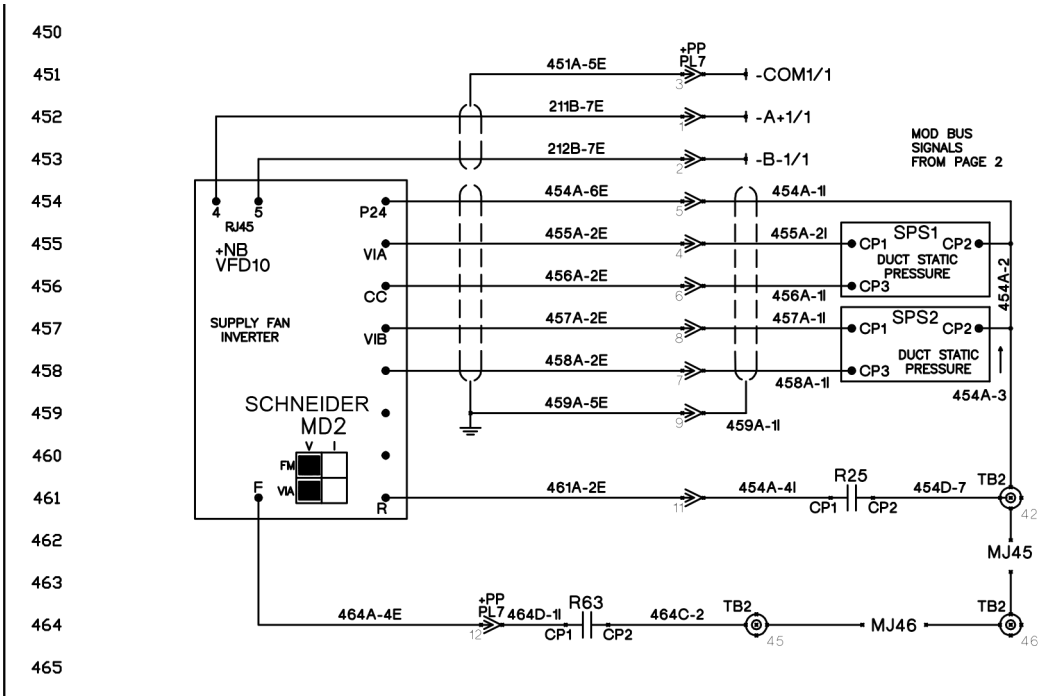


Figure 48: Schneider VFD Wiring



Appendix I - ART 1-4 Wiring Table

MicroTech I ADI Analog Inputs	MicroTech I Component	Label	Special Notes	MicroTech III Wiring Location
A0	Supply Air Temperature Sensor (DAT)	N/A	SAT Sensor Removed and Replaced	MCB-AI1
A1	Return Air Temperature Sensor (RAT)	N/A	RAT Sensor Removed and Replaced	MCB-AI2
A2	Outside Air Temperature Sensor (OAT)	N/A	OAT Sensor Removed and Replaced	MCB-AI3
A3	Zone Temperature Sensor (ZNT1)	N/A	ZNT 1 Sensor Removed and Replaced	MCB-X3 and MCB-X4
A4	Mixed Air Temperature Sensor (MAT)	N/A	MAT Sensor Removed and Replaced. Not used on MicroTech III Rooftop	N/A
A5	Zone Temperature Sensor (ZNT2)	N/A	ZNT 2 Sensor Removed and Replaced. Not used on MicroTech III.	N/A
A6	Zone Temperature Sensor (ZNT3)	N/A	ZNT 3 Sensor Removed and Replaced. Not used on MicroTech III.	N/A
A7	Dirty Final Filter Sensor	N/A	SPS6 Sensor Removed and Replaced. Not used on MicroTech III.	N/A
A8	Dirty Pre-Filter Sensor	N/A	SPS5 Sensor Removed and Dispose. Not used on MicroTech III.	N/A
A9	Supply Fan Vanes Actuator	N/A	ACT1 Actuator Removed and Dispose. Not used on MicroTech III.	N/A
A10	Return Fan Vanes Actuator	N/A	ACT2 Actuator Removed and Dispose. Not used on MicroTech III.	N/A
A11	Outside Air Damper Actuator Feedback	N/A	ACT3 Actuator Removed and Replaced. Not used on MicroTech III.	N/A
A12	Duct Static Pressure Transducer	N/A	SPS1 Transducer Remove and Replaced. MicroTech III will not accept 0-5VDC or 0-10VDC Duct Static Pressure signal. Duct Static Pressure transducer needs to be replaced with a transducer capable of 4-20mA output. Duct Static Pressure may be wired into SF Variable Frequency Drive.	
A13	Building Static Pressure Transducer	N/A	Transducer Removed and Replaced. MicroTech III will not accept 0-5VDC or 0-10VDC Duct Static Pressure signal. Duct Static Pressure/Building Static Pressure transducer needs to be replaced with a transducer capable of 4-20mA output. MicroTech III will not accept a Building Static Pressure transducer on MicroTech III. Building Static Pressure will be wired into RF/EF Variable Frequency Drive.	
A14	Min OA Position Reset Input	Min OA Position Reset	Note: A14 may be input for CO2 or OA Flow on MicroTech III. Technician will need to know if the signal into A14 is appropriate for an input to the MicroTech III for damper control (4-20mA or 0-10VDC). If reset signal is not appropriate it cannot be transferred. Label both wires if keeping.	MCB-X1
A15	N/A	N/A	Extra Input, Not Commonly Used	N/A

MicroTech I ADI Digital Inputs	MicroTech I Component	Label	Special Notes	MicroTech III Wiring Location
D0	Outside Air Enthalpy Relay Switch Input	OAER Switch Output (Also label 24VAC + and 24 VAC Common for switch)	OAER Switch (24V out) and RAE sensor will be kept and wires labeled	MCB-X5
D1	Tennant Override Input	Tennant Override	Keep, Tennant Override switch has correct voltage (24V)	DI3
D2	External Exhaust Fan Status	N/A	Remove and Dispose. External EF Switch N/A in MicroTech III	N/A
D3	N/A	N/A	N/A	N/A
D4	N/A	N/A	N/A	N/A
D5	Refrigeration Circuit #1 Alarm	N/A	Remove and Dispose. DI5 (R-HP1) on MicroTech III needs 120V. On MicroTech I, R5 circuit is 24V to D5. R5 relay contacts can be reused as HP1 relay in MicroTech III.	MCB-DI5
D6	Refrigeration Circuit #2 Alarm	N/A	If second refrigeration circuit exists, Remove and Dispose wire from D6. D6 (R-HP2) on MicroTech III needs 120V. On MicroTech I, R6 circuit is 24V to D6. R6 relay contacts can be reused as HP2 relay in MicroTech III.	MCB-DI6
D7	Duct High Limit (DHL) Input	N/A	Keep DHL switch. R63 relay will need to be added in series with DHL switch. NO R63 relay contacts will be wired into SAF Variable Frequency Drive start enable circuit.	24 VAC and Common Circuit, SAF Variable Frequency Drive
D8	Airflow Status (PC7)	PC7	Keep PC7 Switch, but do not keep it wired to 24V or D8. MicroTech III wiring PC7 is a dry circuit. Label PC7 input and output PC7 wires.	MCB-DI1 and M
D9	Gas Furnace Flame Failure Alarm	N/A	Heat Alarm is not available on MicroTech III	N/A
D10	Freeze Alarm	N/A	Remove and Replace. FS1 is NC on MicroTech III.	MCB-X5

D11	Smoke Alarm	NC Smoke Detector Contacts	Keep NC Smoke Detector contacts. Remove D11 wire from board and label. 24VAC will remain.	MCB-DI4
D12	N/A	N/A	Not Used	N/A
D13	N/A	N/A	Not Used	N/A
D14	N/A	N/A	Not Used	N/A
D15	N/A	N/A	Not Used	N/A

OBA Outputs	MicroTech I Component	Label	Special Notes	MicroTech III Wiring Location
OBA0	Remote Alarm Output	EXT Alarm 1, EXT Alarm 2	On MicroTechI, OBA0 is a NO contact that closes when an alarm is present. On the MicroTech III, DO9 is a NO contact that closes when the alarm is present. Technician should remove wires from OBA0 and reinstall on DO9 circuit. Note: Must install terminal blocks for DO7-DO10 functionality.	MCB-DO9
OBA1	Cool 1	MCB-DO1 and MCB-C1	Depending on the specific unit options, OBA1 may be used as the Compressor #1, Start/Stop for the following configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA1 and label MCB-DO1 and MCB-C1.	MCB-DO1
	Cool1	EXPC-DO1 and EXPC-C1	Depending on the specific unit options, OBA1 may be used as the Compressor #1, Start/Stop for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA1 and label EXPC-DO1 and EXPC-C1.	EXPC-DO1
OBA2	Cool 2	MCB-DO3 and MCB-C3	Depending on the specific unit options, OBA2 may be used as the Compressor #2, Start/Stop for the following configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA2 and label MCB-DO3 and MCB-C3.	MCB-DO3
	Cool 2	EXPC-DO3 and EXPC-C3	Depending on the specific unit options, OBA2 may be used as the Compressor #2, Start/Stop for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA2 and label EXPC-DO3 and EXPC-C3.	EXPC-DO3.
OBA3	Heat On/Off or Heat Enable	EXPB-DO1 and EXPB-C1	Remove both wires from OBA3 and label EXPB-DO1 and EXPB-C1. The two wires will be rewired to DO1 and C1 on EXP-B. Note: On ART1 and 2, OBA3 is single stage on/off. On ART3 and 4, OBA3 is “heat enable” and works with OBA4 and OBA5 for capacity control. MicroTech III does not use OBA4 and OBA5 floating point control for heat.	EXPB-DO1
OBA4	Cool 3	MCB-DO2 and MCB-C3	For ART1 and ART2: Depending on the specific unit options, OBA4 may be used as the Compressor #3, Start/Stop for the following configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA4 and label MCB-DO2 and MCB-C3.	MCB-DO2
	Cool 3	EXPC-DO2 and EXPC-C2	For ART1 and ART2: Depending on the specific unit options, OBA4 may be used as the Compressor #1 Unloader #1, On/Off for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA4 and label EXPC-DO2 and EXPC-C2.	EXPC-DO2
	Heat 2: Heat Valve Close	N/A	For ART3 and ART4: Depending on the specific unit options, OBA4 may be used as the close valve signal for floating point control. MicroTech III uses 0-10 VDC signal to VM1 for capacity. May need to replace VM1 if it cannot accept 0-10VDC signal. Remove R23 relay.	N/A
	Heat 2 On/Off	EXPB-DO2 and EXPB-C2	For ART3 and ART 4: Depending on the specific unit options, OBA4 may be used as the Heat 2 On/Off signal for staged heat configurations. Remove both wires from OBA4 and label EXPB-DO2 and EXPB-C2.	EXPB-DO2
OBA5	Cool 4	MCB-DO2 and MCB-C3	For ART1 and ART2: Depending on the specific unit options, OBA5 may be used as the Compressor #4, Start/Stop for the following configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA4 and label MCB-DO4 and MCB-C4.	MCB-DO4
	Cool 4	EXPC-DO2 and EXPC-C2	For ART1 and ART2: Depending on the specific unit options, OBA4 may be used as the Compressor #2 Unloader #1, On/Off for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA4 and label EXPC-DO4 and EXPC-C2.	EXPC-DO4
	Heat 3: Heat Valve Open	N/A	For ART3 and ART4: OBA5 is the open valve signal for floating point control. MicroTech III uses 0-10 VDC signal to VM1 for capacity. May need to replace VM1 if it cannot accept 0-10VDC signal. Remove R23 relay.	N/A
	Heat 3 On/Off	EXPB-DO3 and EXPB-C3	For ART3 and ART 4: Depending on the specific unit options, OBA5 may be used as the Heat 2 On/Off signal for staged heat configurations. Remove both wires from OBA5 and label EXPB-DO3 and EXPB-C3.	EXPB-DO3

OBA6	VAV Box Output	N/A	VAV Box-Output is not used on MicroTech III	N/A
OBA7	Outdoor Air Damper Close	N/A	Floating Point BOs not used on MicroTech III. Note: Economizer ACT 3 may need to be replaced if it cannot accept analog signal. 0-10VDC signal to OA Damper ACT3 will come from MCB-X7.	N/A
OBA8	Outdoor Air Damper Open	N/A	Floating Point BOs not used on MicroTech III. Note: Economizer ACT 3 may need to be replaced if it cannot accept analog signal. 0-10VDC signal to OA Damper ACT3 will come from MCB-X7.	N/A
OBA9	Supply Fan Airflow Decrease	N/A	Floating Point BOs not used on MicroTech III. Note: SF ACT 1 will not be used on MicroTech III.	N/A
OBA10	Supply Fan Airflow Increase	N/A	Floating Point BOs not used on MicroTech III. Note: SF ACT 1 will not be used on MicroTech III.	N/A
OBA11	Return Fan Airflow Decrease	N/A	Floating Point BOs not used on MicroTech III. Note: RF ACT 2 will not be used on MicroTech III.	N/A
OBA12	Return Fan Airflow Increase	N/A	Floating Point BOs not used on MicroTech III. Note: RF ACT 2 will not be used on MicroTech III.	N/A
OBA13	Supply Fan Start/Stop	MCB C5-6 and MCB DO5	Remove both wires from OBA13 and label MCB C5-6 and MCB DO5.	MCB C5-6 and MCB DO5
OBA14	Return Fan Start/Stop	N/A	MicroTech III RPS does not have across the line RF/EF motors. Start/Stop and M20 contactors will not be used on MicroTech III. Instead, a RF/EF Variable Frequency Drive will need to be added to unit. Start/Stop will come from Modbus.	N/A
OBA15	Occupied Output	Fan Op 1, Fan Op 2	On MicroTechI, OBA15 is a NO contact that closes when an fans are on. On the MicroTech III, DO10 is a NO contact that closes when the fans are on. Technician should remove wires from OBA15 and reinstall on DO10 circuit. Note: Must install terminal blocks for DO7-DO10 functionality.	MCB-D010

OBB Outputs	MicroTech I Component	Label	Special Notes	MicroTech III Wiring Location
OBB0	Cool 1	MCB-DO1 and MCB-C1	Depending on the specific unit options, OBB0 may be used as the Compressor #1, Start/Stop for the following configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB0 and label MCB-DO1 and MCB-C1.	MCB-DO1
	Cool 1	EXPC-DO1 and EXPC-C1	Depending on the specific unit options, OBB0 may be used as the Compressor #1, Start/Stop for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB0 and label EXPC-DO1 and EXPC-C1.	EXPC-DO1
OBB1	Cool 2	MCB-DO3 and MCB-C3	Depending on the specific unit options, OBB1 may be used as the Compressor #2, Start/Stop for the following configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB1 and label MCB-DO3 and MCB-C1.	MCB-DO3
	Cool 2	EXPC-DO3 and EXPC-C3	Depending on the specific unit options, OBB1 may be used as the Compressor #2, Start/Stop for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB1 and label EXPC-DO3 and EXPC-C1.	EXPC-DO3
OBB2	Cool 3	MCB-DO2 and MCB-C2	Depending on the specific unit options, OBB2 may be used as the Compressor #3, Start/Stop for the following configurations: 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB2 and label MCB-DO2 and MCB-C2.	MCB-DO2
	Cool 3	EXPC-DO2 and EXPC-C2	Depending on the specific unit options, OBB2 may be used as the Compressor #1 Unloader #1, On/Off for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB2 and label EXPC-DO2 and EXPC-C1.	EXPC-DO2
OBB3	Cool 4	MCB-DO4 and MCB-C4	Depending on the specific unit options, OBB3 may be used as the Compressor #4, Start/Stop for the following configurations: 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB3 and label MCB-DO2 and MCB-C2.	MCB-DO4
	Cool 4	EXPC-DO4 and EXPC-C4	Depending on the specific unit options, OBB3 may be used as the Compressor #2 Unloader #1, On/Off for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB3 and label EXPC-DO4 and EXPC-C1.	EXPC-DO4

OBB4	Cool 5	EXPA-DO1 and EXPA-C1	Depending on the specific unit options, OBB4 may be used as the Compressor #5, Start/Stop for the following configuration: 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB4 and label EXPA-DO1 and EXPA-C1.	EXPA-DO1
	Cool 5	MCB-DO2 and MCB-C2	Depending on the specific unit options, OBB4 may be used as the Compressor #1 Unloader #2, On/Off for the following configuration: 2-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB4 and label MCB-DO2 and MCB-C2.	MCB-DO2
	Cool 5	MCB-DO2 and MCB-C2	Depending on the specific unit options, OBB4 may be used as the Compressor #3 Start/Stop for the following configuration: 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB4 and label MCB-DO2 and MCB-C2.	MCB-DO2
OBB5	Cool 6	EXPA-DO2 and EXPA-C2	Depending on the specific unit options, OBB5 may be used as the Compressor #6, Start/Stop for the following configuration: 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB5 and label EXPA-DO2 and EXPA-C2.	EXPA-DO2
	Cool 6	MCB-DO4 and MCB-C4	Depending on the specific unit options, OBB5 may be used as the Compressor #2 Unloader #2, On/Off for the following configuration: 2-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB5 and label MCB-DO4 and MCB-C4.	MCB-DO4
	Cool 6	MCB-DO4 and MCB-C4	Depending on the specific unit options, OBB5 may be used as the Compressor #4 Start/Stop for the following configuration: 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB5 and label MCB-DO4 and MCB-C4.	MCB-DO4
OBB6	Cool 7	N/A	7th Stage of Cooling is not available on the MicroTech III and not supported through this conversion document.	N/A
OBB7	Cool 8	N/A	8th Stage of Cooling is not available on the MicroTech III and not supported through this conversion document.	N/A

OBC Outputs	MicroTech I Component	Label	Special Notes	MicroTech III Wiring Location
OBC0	Electric Heat Stage 1	GHS1-1 and GHS1-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO1
OBC1	Electric Heat Stage 2	GHS2-1 and GHS2-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO2
OBC2	Electric Heat Stage 3	GHS3-1 and GHS3-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO3
OBC3	Electric Heat Stage 4	GHS4-1 and GHS4-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO4
OBC4	Electric Heat Stage 5	GHS5-1 and GHS5-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO5
OBC5	Electric Heat Stage 6	GHS6-1 and GHS6-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO6

Appendix J - ART 5 and 7 (CAV-ZTC) Wiring Table

MicroTech I ADI Analog Inputs	MicroTech I Component	Label	Special Notes	MicroTech III Wiring Location
A0	Supply Air Temperature Sensor (DAT)	N/A	SAT Sensor Removed and Replaced	MCB-AI1
A1	Return Air Temperature Sensor (RAT)	N/A	RAT Sensor Removed and Replaced	MCB-AI2
A2	Outside Air Temperature Sensor (OAT)	N/A	OAT Sensor Removed and Replaced	MCB-AI3
A3	Zone Temperature Sensor (ZNT1)	N/A	ZNT 1 Sensor Removed and Replaced	MCB-X3 and MCB-X4
A4	Mixed Air Temperature Sensor (MAT)	N/A	MAT Sensor Removed and Replaced. Not used on MicroTech III Rooftop	N/A
A5	Zone Temperature Sensor (ZNT2)	N/A	ZNT 2 Sensor Removed and Replaced. Not used on MicroTech III.	N/A
A6	Zone Temperature Sensor (ZNT3)	N/A	ZNT 3 Sensor Removed and Replaced. Not used on MicroTech III.	N/A

A7	Dirty Final Filter Sensor	N/A	SPS6 Sensor Removed and Replaced. Not used on MicroTech III.	N/A
A8	Dirty Pre-Filter Sensor	N/A	SPS5 Sensor Removed and Dispose. Not used on MicroTech III.	N/A
A9	Supply Fan Vanes Actuator	N/A	ACT1 Actuator Removed and Dispose. Not used on MicroTech III.	N/A
A10	Return Fan Vanes Actuator	N/A	ACT2 Actuator Removed and Dispose. Not used on MicroTech III.	N/A
A11	Outside Air Damper Actuator Feedback	N/A	ACT3 Actuator Removed and Replaced. Not used on MicroTech III.	N/A
A12	Duct Static Pressure Transducer	N/A	SPS1 Transducer Remove and Replaced. MicroTech III will not accept 0-5VDC or 0-10VDC Duct Static Pressure signal. Duct Static Pressure transducer needs to be replaced with a transducer capable of 4-20mA output. Duct Static Pressure may be wired into SF Variable Frequency Drive.	
A13	Building Static Pressure Transducer	N/A	Transducer Removed and Replaced. MicroTech III will not accept 0-5VDC or 0-10VDC Duct Static Pressure signal. Duct Static Pressure/Building Static Pressure transducer needs to be replaced with a transducer capable of 4-20mA output. MicroTech III will not accept a Building Static Pressure transducer on MicroTech III. Building Static Pressure will be wired into RF/EF Variable Frequency Drive.	
A14	Min OA Position Reset Input	Min OA Position Reset	Note: A14 may be input for CO2 or OA Flow on MicroTech III. Technician will need to know if the signal into A14 is appropriate for an input to the MicroTech III for damper control (4-20mA or 0-10VDC). If reset signal is not appropriate it cannot be transferred. Label both wires if keeping.	MCB-X1
A15	N/A	N/A	Extra Input, Not Commonly Used	N/A

MicroTech I ADI Digital Inputs	MicroTech I Component	Label	Special Notes	MicroTech III Wiring Location
D0	Outside Air Enthalpy Relay Switch Input	OAER Switch Output (Also label 24VAC + and 24 VAC Common for switch)	OAER Switch (24V out) and RAE sensor will be kept and wires labeled	MCB-X5
D1	Tennant Override Input	Tennant Override	Keep, Tennant Override switch has correct voltage (24V)	DI3
D2	External Exhaust Fan Status	N/A	Remove and Dispose. External EF Switch N/A in MicroTech III	N/A
D3	N/A	N/A	N/A	N/A
D4	N/A	N/A	N/A	N/A
D5	Refrigeration Circuit #1 Alarm	N/A	Remove and Dispose. DI5 (R-HP1) on MicroTech III needs 120V. On MicroTech I, R5 circuit is 24V to D5. R5 relay contacts can be reused as HP1 relay in MicroTech III.	MCB-DI5
D6	Refrigeration Circuit #2 Alarm	N/A	If second refrigeration circuit exists, Remove and Dispose wire from D6. D6 (R-HP2) on MicroTech III needs 120V. On MicroTech I, R6 circuit is 24V to D6. R6 relay contacts can be reused as HP2 relay in MicroTech III.	MCB-DI6
D7	Duct High Limit (DHL) Input	N/A	Keep DHL switch. R63 relay will need to be added in series with DHL switch. NO R63 relay contacts will be wired into SAF Variable Frequency Drive start enable circuit.	24 VAC and Common Circuit, SAF Variable Frequency Drive
D8	Airflow Status (PC7)	PC7	Keep PC7 Switch, but do not keep it wired to 24V or D8. MicroTech III wiring PC7 is a dry circuit. Label PC7 input and output PC7 wires.	MCB-DI1 and M
D9	Gas Furnace Flame Failure Alarm	N/A	Heat Alarm is not available on MicroTech III	N/A
D10	Freeze Alarm	N/A	Remove and Replace. FS1 is NC on MicroTech III.	MCB-X5
D11	Smoke Alarm	NC Smoke Detector Contacts	Keep NC Smoke Detector contacts. Remove D11 wire from board and label. 24VAC will remain.	MCB-DI4
D12	N/A	N/A	Not Used	N/A
D13	N/A	N/A	Not Used	N/A
D14	N/A	N/A	Not Used	N/A
D15	N/A	N/A	Not Used	N/A

OBA Outputs	MicroTech I Component	Label	Special Notes	MicroTech III Wiring Location
OBA0	Remote Alarm Output	EXT Alarm 1, EXT Alarm 2	On MicroTechI, OBA0 is a NO contact that closes when an alarm is present. On the MicroTech III, DO9 is a NO contact that closes when the alarm is present. Technician should remove wires from OBA0 and reinstall on DO9 circuit. Note: Must install terminal blocks for DO7-DO10 functionality.	MCB-DO9

OBA1	Cool 1	MCB-DO1 and MCB-C1	Depending on the specific unit options, OBA1 may be used as the Compressor #1, Start/Stop for the following configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA1 and label MCB-DO1 and MCB-C1.	MCB-DO1
	Cool1	EXPC-DO1 and EXPC-C1	Depending on the specific unit options, OBA1 may be used as the Compressor #1, Start/Stop for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA1 and label EXPC-DO1 and EXPC-C1.	EXPC-DO1
OBA2	Cool 2	MCB-DO3 and MCB-C3	Depending on the specific unit options, OBA2 may be used as the Compressor #2, Start/Stop for the following configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA2 and label MCB-DO3 and MCB-C3.	MCB-DO3
	Cool 2	EXPC-DO3 and EXPC-C3	Depending on the specific unit options, OBA2 may be used as the Compressor #2, Start/Stop for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA2 and label EXPC-DO3 and EXPC-C3.	EXPC-DO3.
OBA3	Heat On/Off or Heat Enable	EXPB-DO1 and EXPB-C1	Remove both wires from OBA3 and label EXPB-DO1 and EXPB-C1. The two wires will be rewired to DO1 and C1 on EXP-B. Note: On ART1 and 2, OBA3 is single stage on/off. On ART3 and 4, OBA3 is "heat enable" and works with OBA4 and OBA5 for capacity control. MicroTech III does not use OBA4 and OBA5 floating point control for heat.	EXPB-DO1
OBA4	Cool 3	MCB-DO2 and MCB-C3	For ART1 and ART2: Depending on the specific unit options, OBA4 may be used as the Compressor #3, Start/Stop for the following configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA4 and label MCB-DO2 and MCB-C3.	MCB-DO2
	Cool 3	EXPC-DO2 and EXPC-C2	For ART1 and ART2: Depending on the specific unit options, OBA4 may be used as the Compressor #1 Unloader #1, On/Off for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA4 and label EXPC-DO2 and EXPC-C2.	EXPC-DO2
	Heat 2: Heat Valve Close	N/A	For ART3 and ART4: Depending on the specific unit options, OBA4 may be used as the close valve signal for floating point control. MicroTech III uses 0-10 VDC signal to VM1 for capacity. May need to replace VM1 if it cannot accept 0-10VDC signal. Remove R23 relay.	N/A
	Heat 2 On/Off	EXPB-DO2 and EXPB-C2	For ART3 and ART 4: Depending on the specific unit options, OBA4 may be used as the Heat 2 On/Off signal for staged heat configurations. Remove both wires from OBA4 and label EXPB-DO2 and EXPB-C2.	EXPB-DO2
OBA5	Cool 4	MCB-DO2 and MCB-C3	For ART1 and ART2: Depending on the specific unit options, OBA5 may be used as the Compressor #4, Start/Stop for the following configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA4 and label MCB-DO4 and MCB-C4.	MCB-DO4
	Cool 4	EXPC-DO2 and EXPC-C2	For ART1 and ART2: Depending on the specific unit options, OBA4 may be used as the Compressor #2 Unloader #1, On/Off for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA4 and label EXPC-DO4 and EXPC-C2.	EXPC-DO4
	Heat 3: Heat Valve Open	N/A	For ART3 and ART4: OBA5 is the open valve signal for floating point control. MicroTech III uses 0-10 VDC signal to VM1 for capacity. May need to replace VM1 if it cannot accept 0-10VDC signal. Remove R23 relay.	N/A
	Heat 3 On/Off	EXPB-DO3 and EXPB-C3	For ART3 and ART 4: Depending on the specific unit options, OBA5 may be used as the Heat 2 On/Off signal for staged heat configurations. Remove both wires from OBA5 and label EXPB-DO3 and EXPB-C3.	EXPB-DO3
OBA6	VAV Box Output	N/A	VAV Box-Output is not used on MicroTech III	N/A

OBA7	Outdoor Air Damper Close	N/A	Floating Point BOs not used on MicroTech III. Note: Economizer ACT 3 may need to be replaced if it cannot accept analog signal. 0-10VDC signal to OA Damper ACT3 will come from MCB-X7.	N/A
OBA8	Outdoor Air Damper Open	N/A	Floating Point BOs not used on MicroTech III. Note: Economizer ACT 3 may need to be replaced if it cannot accept analog signal. 0-10VDC signal to OA Damper ACT3 will come from MCB-X7.	N/A
OBA9	Supply Fan Airflow Decrease	N/A	Floating Point BOs not used on MicroTech III. Note: SF ACT 1 will not be used on MicroTech III.	N/A
OBA10	Supply Fan Airflow Increase	N/A	Floating Point BOs not used on MicroTech III. Note: SF ACT 1 will not be used on MicroTech III.	N/A
OBA11	Return Fan Airflow Decrease	N/A	Floating Point BOs not used on MicroTech III. Note: RF ACT 2 will not be used on MicroTech III.	N/A
OBA12	Return Fan Airflow Increase	N/A	Floating Point BOs not used on MicroTech III. Note: RF ACT 2 will not be used on MicroTech III.	N/A
OBA13	Supply Fan Start/Stop	MCB C5-6 and MCB DO5	Remove both wires from OBA13 and label MCB C5-6 and MCB DO5.	MCB C5-6 and MCB DO5
OBA14	Return Fan Start/Stop	N/A	MicroTech III RPS does not have across the line RF/EF motors. Start/Stop and M20 contactors will not be used on MicroTech III. Instead, a RF/EF Variable Frequency Drive will need to be added to unit. Start/Stop will come from Modbus.	N/A
OBA15	Occupied Output	Fan Op 1, Fan Op 2	On MicroTechI, OBA15 is a NO contact that closes when an fans are on. On the MicroTech III, DO10 is a NO contact that closes when the fans are on. Technician should remove wires from OBA15 and reinstall on DO10 circuit. Note: Must install terminal blocks for DO7-DO10 functionality.	MCB-D010

OBB Outputs	MicroTech I Component	Label	Special Notes	MicroTech III Wiring Location
OBB0	Cool 1	MCB-DO1 and MCB-C1	Depending on the specific unit options, OBB0 may be used as the Compressor #1, Start/Stop for the following configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB0 and label MCB-DO1 and MCB-C1.	MCB-DO1
	Cool 1	EXPC-DO1 and EXPC-C1	Depending on the specific unit options, OBB0 may be used as the Compressor #1, Start/Stop for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB0 and label EXPC-DO1 and EXPC-C1.	EXPC-DO1
OBB1	Cool 2	MCB-DO3 and MCB-C3	Depending on the specific unit options, OBB1 may be used as the Compressor #2, Start/Stop for the following configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB1 and label MCB-DO3 and MCB-C1.	MCB-DO3
	Cool 2	EXPC-DO3 and EXPC-C3	Depending on the specific unit options, OBB1 may be used as the Compressor #2, Start/Stop for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB1 and label EXPC-DO3 and EXPC-C1.	EXPC-DO3
OBB2	Cool 3	MCB-DO2 and MCB-C2	Depending on the specific unit options, OBB2 may be used as the Compressor #3, Start/Stop for the following configurations: 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB2 and label MCB-DO2 and MCB-C2.	MCB-DO2
	Cool 3	EXPC-DO2 and EXPC-C2	Depending on the specific unit options, OBB2 may be used as the Compressor #1 Unloader #1, On/Off for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB2 and label EXPC-DO2 and EXPC-C1.	EXPC-DO2

OBB3	Cool 4	MCB-DO4 and MCB-C4	Depending on the specific unit options, OBB3 may be used as the Compressor #4, Start/Stop for the following configurations: 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB3 and label MCB-DO2 and MCB-C2.	MCB-DO4
	Cool 4	EXPC-DO4 and EXPC-C4	Depending on the specific unit options, OBB3 may be used as the Compressor #2 Unloader #1, On/Off for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB3 and label EXPC-DO4 and EXPC-C1.	EXPC-DO4
OBB4	Cool 5	EXPA-DO1 and EXPA-C1	Depending on the specific unit options, OBB4 may be used as the Compressor #5, Start/Stop for the following configuration: 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB4 and label EXPA-DO1 and EXPA-C1.	EXPA-DO1
	Cool 5	MCB-DO2 and MCB-C2	Depending on the specific unit options, OBB4 may be used as the Compressor #1 Unloader #2, On/Off for the following configuration: 2-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB4 and label MCB-DO2 and MCB-C2.	MCB-DO2
	Cool 5	MCB-DO2 and MCB-C2	Depending on the specific unit options, OBB4 may be used as the Compressor #3 Start/Stop for the following configuration: 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB4 and label MCB-DO2 and MCB-C2.	MCB-DO2
OBB5	Cool 6	EXPA-DO2 and EXPA-C2	Depending on the specific unit options, OBB5 may be used as the Compressor #6, Start/Stop for the following configuration: 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB5 and label EXPA-DO2 and EXPA-C2.	EXPA-DO2
	Cool 6	MCB-DO4 and MCB-C4	Depending on the specific unit options, OBB5 may be used as the Compressor #2 Unloader #2, On/Off for the following configuration: 2-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB5 and label MCB-DO4 and MCB-C4.	MCB-DO4
	Cool 6	MCB-DO4 and MCB-C4	Depending on the specific unit options, OBB5 may be used as the Compressor #4 Start/Stop for the following configuration: 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB5 and label MCB-DO4 and MCB-C4.	MCB-DO4
OBB6	Cool 7	N/A	7th Stage of Cooling is not available on the MicroTech III and not supported through this conversion document.	N/A
OBB7	Cool 8	N/A	8th Stage of Cooling is not available on the MicroTech III and not supported through this conversion document.	N/A

OBC Outputs	MicroTech I Component	Label	Special Notes	MicroTech III Wiring Location
OBC0	Electric Heat Stage 1	GHS1-1 and GHS1-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO1
OBC1	Electric Heat Stage 2	GHS2-1 and GHS2-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO2
OBC2	Electric Heat Stage 3	GHS3-1 and GHS3-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO3
OBC3	Electric Heat Stage 4	GHS4-1 and GHS4-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO4
OBC4	Electric Heat Stage 5	GHS5-1 and GHS5-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO5
OBC5	Electric Heat Stage 6	GHS6-1 and GHS6-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO6

Appendix J - ART 5 and 7 (CAV-ZTC) Wiring Table

MicroTech I ADI Analog Inputs	MicroTech I Component	Label	Special Notes	MicroTech III Wiring Location
A0	Supply Air Temperature Sensor (DAT)	N/A	SAT Sensor Removed and Replaced	MCB-AI1
A1	Return Air Temperature Sensor (RAT)	N/A	RAT Sensor Removed and Replaced. Note: Not used with ART7 code.	MCB-AI2
A2	Outside Air Temperature Sensor (OAT)	N/A	OAT Sensor Removed and Replaced	MCB-AI3
A3	Zone Temperature Sensor (ZNT1)	N/A	ZNT 1 Sensor Removed and Replaced	MCB-X3 and MCB-X4
A4	Mixed Air Temperature Sensor (MAT)	N/A	MAT Sensor Removed. MicroTech III does not use MAT sensor with RPS units.	N/A
A5	Zone Temperature Sensor (ZNT2)	N/A	ZNT 2 Sensor Removed. MicroTech III does not allow multiple space temperature sensor inputs.	N/A
A6	Zone Temperature Sensor (ZNT3)	N/A	ZNT 3 Sensor Removed. MicroTech III does not allow multiple space temperature sensor inputs.	N/A
A7	Dirty Final Filter Sensor	N/A	SPS6 Sensor Removed and Discarded. Not used on MicroTech III.	N/A
A8	Dirty Pre-Filter Sensor	N/A	SPS5 Sensor Removed and Discarded. Not used on MicroTech III.	N/A
A9	Remote Heating Setpoint	N/A	Remove wire from A9. Individual Heating and Cooling Setpoint inputs not used on MicroTech III. Remote Setpoint adjustment can be performed through Space Sensor input.	N/A
A10	Remote Cooling Setpoint	N/A	Remove wire from A10. Heating and Cooling Set Point inputs not used on MicroTech III	N/A
A11	OA Damper Position Feedback	N/A	Not Used on MicroTech III.	N/A
A12	N/A	N/A	A12 not used on MicroTech I. Note: Not used with ART7 code.	N/A
A13	Building Static Pressure (Optional)	N/A	Building Static Pressure Sensor (SPS2) on MicroTech I will need to be replaced because MicroTech III uses an SPS2 with 4-20mA signal output. SPS2 will be wired to the RF/EF Variable Frequency Drive. Note: Not used with ART7 code.	RF/EF Variable Frequency Drive
A14	External OA Damper Position Reset Signal	OA Reset -1 and OA Reset -2	Note: A14 may be input for CO2 or OA Flow on MicroTech III. Technician will need to know if the signal into A14 is appropriate for an input to the MicroTech III for OA Damper control. Note: Not used with ART7 code.	MCB-X1 and M
A15	N/A	N/A	AI15 not used on MicroTech I.	N/A

MicroTech I ADI Digital Inputs	MicroTech I Component	Label	Special Notes	MicroTech III Wiring Location
D0	Outside Air Enthalpy Relay Switch Input	OAER Switch Output (Also label 24VAC + and 24 VAC Common for switch)	OAER Switch (24V out) and RAE sensor will be kept and wires labeled. Note: Not used with ART7 code.	MCB-X5
D1	Tennant Override Input	Tennant Override	Keep, Tennant Override switch has correct voltage (24V)	DI3
D2	N/A	N/A	Not Used on MicroTech I	N/A
D3	Remote Cool Enable (Optional)	N/A	Not Used on MicroTech III	N/A
D4	Remote Heat Enable (Optional)	N/A	Not Used on MicroTech III	N/A
D5	Refrigeration Circuit #1 Alarm	N/A	Remove and Dispose. DI5 (R-HP1) on MicroTech III needs 120V. On MicroTech I, R5 circuit is 24V to D5. R5 relay contacts can be reused as HP1 relay in MicroTech III.	MCB-DI5
D6	Refrigeration Circuit #2 Alarm	N/A	If second refrigeration circuit exists, Remove and Dispose wire from D6. D6 (R-HP2) on MicroTech III needs 120V. On MicroTech I, R6 circuit is 24V to D6. R6 relay contacts can be reused as HP2 relay in MicroTech III.	MCB-DI6
D7	N/A	N/A	Not Used on MicroTech I	N/A
D8	Airflow Status (PC7)	PC7	Keep PC7 Switch, but do not keep it wired to 24V or D8. MicroTech III wiring PC7 is a dry circuit. Label PC7 input and output PC7 wires.	MCB-DI1 and M
D9	Gas Furnace Flame Failure Alarm	N/A	Heat Alarm is not available on MicroTech III	N/A
D10	Freeze Alarm	N/A	Remove and Replace. FS1 is NC on MicroTech III.	MCB-X5
D11	Smoke Alarm	NC Smoke Detector Contacts	Keep NC Smoke Detector contacts. Remove D11 wire from board and label. 24VAC will remain.	MCB-DI4
D12	N/A	N/A	Not Used on MicroTech I	N/A

D13	N/A	N/A	Not Used on MicroTech I	N/A
D14	N/A	N/A	Not Used on MicroTech I	N/A
D15	N/A	N/A	Not Used on MicroTech I	N/A

OBA Outputs	MicroTech I Component	Label	Special Notes	MicroTech III Wiring Location
OBA0	Remote Alarm Output	EXT Alarm 1, EXT Alm 2	On MicroTechI, OBA0 is a NO contact that closes when an alarm is present. On the MicroTech III, DO9 is a NO contact that closes when the alarm is present. Technician should remove wires from OBA0 and reinstall on DO9 circuit. Note: Must install terminal blocks for DO7-DO10 functionality.	MCB-DO9
OBA1	Cool 1	MCB-DO1 and MCB-C1	Depending on the specific unit options, OBA1 may be used as the Compressor #1, Start/Stop for the following configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA1 and label MCB-DO1 and MCB-C1.	MCB-DO1
	Cool 1	EXPC-DO1 and EXPC-C1	Depending on the specific unit options, OBA1 may be used as the Compressor #1, Start/Stop for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA1 and label EXPC-DO1 and EXPC-C1.	EXPC-DO1
OBA2	Cool 2	MCB-DO3 and MCB-C3	Depending on the specific unit options, OBA2 may be used as the Compressor #2, Start/Stop for the following configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA2 and label MCB-DO3 and MCB-C3.	MCB-DO3
	Cool 2	EXPC-DO3 and EXPC-C3	Depending on the specific unit options, OBA2 may be used as the Compressor #2, Start/Stop for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA2 and label EXPC-DO3 and EXPC-C3.	EXPC-DO3
OBA3	Heat 1 On/Off or Heat Enable	EXPB-DO1 and EXPB-C1	Depending on the specific unit options, OBA3 may be used as the first stage Heat On/Off or Heat Enable. Remove both wires from OBA3 and label EXPB-DO1 and EXPB-C1.	EXPB-DO1
OBA4	Heat 2: Heat Valve Close	N/A	Depending on the specific unit options, OBA4 may be used as the close valve signal for floating point control. MicroTech III uses 0-10 VDC signal to VM1 for capacity. May need to replace VM1 if it cannot accept 0-10VDC signal. Remove R23 relay.	N/A
	Heat 2 On/Off	EXPB-DO2 and EXPB-C2	Depending on the specific unit options, OBA4 may be used as the Heat 2 On/Off signal for staged heat configurations. Remove both wires from OBA4 and label EXPB-DO2 and EXPB-C2.	EXPB-DO2
OBA5	Heat 3: Heat Valve Open	N/A	Depending on the specific unit options, OBA5 may be used as the open valve signal for floating point control. MicroTech III uses 0-10 VDC signal to VM1 for capacity. May need to replace VM1 if it cannot accept 0-10VDC signal. Remove R23 relay.	N/A
	Heat 3 On/Off	EXPB-DO3 and EXPB-C3	Depending on the specific unit options, OBA5 may be used as the Heat 3 On/Off signal for staged heat configurations. Remove both wires from OBA5 and label EXPB-DO3 and EXPB-C3.	EXPB-DO3
OBA6	Heat 4 On/Off	EXPB-DO4 and EXPB-C4	Depending on the specific unit options, OBA6 may be used as the Heat 4 On/Off signal for staged heat configurations. Remove both wires from OBA6 and label EXPB-DO4 and EXPB-C4.	EXPB-DO4
OBA7	Outdoor Air Damper Close	N/A	Floating Point BOs not used on MicroTech III. Note: Economizer ACT 3 may need to be replaced if it cannot accept analog signal. 0-10VDC signal to OA Damper ACT3 will come from MCB-X7.	N/A
OBA8	Outdoor Air Damper Open	N/A	Floating Point BOs not used on MicroTech III. Note: Economizer ACT 3 may need to be replaced if it cannot accept analog signal. 0-10VDC signal to OA Damper ACT3 will come from MCB-X7.	N/A
OBA9	Cool 3	MCB-DO2 and MCB-C3	Depending on the specific unit options, OBA9 may be used as the Compressor #3, Start/Stop for the following configurations: 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA9 and label MCB-DO2 and MCB-C3.	MCB-DO2
	Cool 3	EXPC-DO2 and EXPC-C2	Depending on the specific unit options, OBA9 may be used as the Compressor #1 Unloader #1, On/Off for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA9 and label EXPC-DO2 and EXPC-C2.	EXPC-DO2

OBA10	Cool 4	MCB-DO2 and MCB-C3	Depending on the specific unit options, OBA10 may be used as the Compressor #4, Start/Stop for the following configurations: 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA10 and label MCB-DO4 and MCB-C4.	MCB-DO4
	Cool 4	EXPC-DO2 and EXPC-C2	Depending on the specific unit options, OBA10 may be used as the Compressor #2 Unloader #1, On/Off for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA10 and label EXPC-DO4 and EXPC-C2.	EXPC-DO4
OBA11	Return Fan Airflow Decrease	N/A	Floating Point BOs not used on MicroTech III. Note: RF ACT 2 will not be used on MicroTech III.	N/A
	Cool 5 (ART7 Only)	EXPA-DO1 and EXPA-C1	Depending on the specific unit options, OBA11 may be used as the Compressor #6, Start/Stop for the following configuration: 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA11 and label EXPA-DO1 and EXPA-C1.	EXPA-DO1
OBA12	Return Fan Airflow Increase	N/A	Floating Point BOs not used on MicroTech III. Note: RF ACT 2 will not be used on MicroTech III.	N/A
	Cool 6 (ART7 Only)	EXPA-DO2 and EXPA-C2	Depending on the specific unit options, OBA12 may be used as the Compressor #6, Start/Stop for the following configuration: 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA12 and label EXPA-DO2 and EXPA-C2.	EXPA-DO2
OBA13	Supply Fan Start/Stop	MCB C5-6 and MCB DO5	Remove both wires from OBA13 and label MCB C5-6 and MCB DO5.	MCB C5-6 and MCB DO5
OBA14	RF Start/Stop (ART7 and ART8, output not used)	N/A	MicroTech III RPS does not have across the line RF/EF motors. Start/Stop and M20 contactors will not be used on MicroTech III. Instead, a RF/EF Variable Frequency Drive will need to be added to unit. Start/Stop will come from Modbus. Note: OBA14 not used with ART7 and ART8 code.	N/A
OBA15	Occupied Output	Fan Op 1, Fan Op 2	On MicroTechI, OBA15 is a NO contact that closes when fans are on. On the MicroTech III, DO10 is a NO contact that closes when the fans are on. Technician should remove wires from OBA15 and reinstall on DO10 circuit. Note: Must install terminal blocks for DO7-DO10 functionality.	MCB-D010

OBB Outputs	MicroTech I Component	Label	Special Notes	MicroTech III Wiring Location
OBB0	Cool 1	MCB-DO1 and MCB-C1	Depending on the specific unit options, OBB0 may be used as the Compressor #1, Start/Stop for the following configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB0 and label MCB-DO1 and MCB-C1.	MCB-DO1
	Cool 1	EXPC-DO1 and EXPC-C1	Depending on the specific unit options, OBB0 may be used as the Compressor #1, Start/Stop for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB0 and label EXPC-DO1 and EXPC-C1.	EXPC-DO1
OBB1	Cool 2	MCB-DO3 and MCB-C3	Depending on the specific unit options, OBB1 may be used as the Compressor #2, Start/Stop for the following configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB1 and label MCB-DO3 and MCB-C1.	MCB-DO3
	Cool 2	EXPC-DO3 and EXPC-C3	Depending on the specific unit options, OBB1 may be used as the Compressor #2, Start/Stop for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB1 and label EXPC-DO3 and EXPC-C1.	EXPC-DO3
OBB2	Cool 3	MCB-DO2 and MCB-C2	Depending on the specific unit options, OBB2 may be used as the Compressor #3, Start/Stop for the following configurations: 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB2 and label MCB-DO2 and MCB-C2.	MCB-DO2
	Cool 3	EXPC-DO2 and EXPC-C2	Depending on the specific unit options, OBB2 may be used as the Compressor #1 Unloader #1, On/Off for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB2 and label EXPC-DO2 and EXPC-C1.	EXPC-DO2

OBB3	Cool 4	MCB-DO4 and MCB-C4	Depending on the specific unit options, OBB3 may be used as the Compressor #4, Start/Stop for the following configurations: 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB3 and label MCB-DO2 and MCB-C2.	MCB-DO4
	Cool 4	EXPC-DO4 and EXPC-C4	Depending on the specific unit options, OBB3 may be used as the Compressor #2 Unloader #1, On/Off for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB3 and label EXPC-DO4 and EXPC-C1.	EXPC-DO4
OBB4	Cool 5	EXPA-DO1 and EXPA-C1	Depending on the specific unit options, OBB4 may be used as the Compressor #5, Start/Stop for the following configuration: 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB4 and label EXPA-DO1 and EXPA-C1.	EXPA-DO1
	Cool 5	MCB-DO2 and MCB-C2	Depending on the specific unit options, OBB4 may be used as the Compressor #1 Unloader #2, On/Off for the following configuration: 2-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB4 and label MCB-DO2 and MCB-C2.	MCB-DO2
	Cool 5	MCB-DO2 and MCB-C2	Depending on the specific unit options, OBB4 may be used as the Compressor #3 Start/Stop for the following configuration: 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB4 and label MCB-DO2 and MCB-C2.	MCB-DO2
OBB5	Cool 6	EXPA-DO2 and EXPA-C2	Depending on the specific unit options, OBB5 may be used as the Compressor #6, Start/Stop for the following configuration: 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB5 and label EXPA-DO2 and EXPA-C2.	EXPA-DO2
	Cool 6	MCB-DO4 and MCB-C4	Depending on the specific unit options, OBB5 may be used as the Compressor #2 Unloader #2, On/Off for the following configuration: 2-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB5 and label MCB-DO4 and MCB-C4.	MCB-DO4
	Cool 6	MCB-DO4 and MCB-C4	Depending on the specific unit options, OBB5 may be used as the Compressor #4 Start/Stop for the following configuration: 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB5 and label MCB-DO4 and MCB-C4.	MCB-DO4
OBB6	Cool 7	N/A	7th Stage of Cooling is not available on the MicroTech III and not supported through this conversion document.	N/A
OBB7	Cool 8	N/A	8th Stage of Cooling is not available on the MicroTech III and not supported through this conversion document.	N/A

OBC Outputs	MicroTech I Component	Label	Special Notes	MicroTech III Wiring Location
OBC0	Electric Heat Stage 1	GHS1-1 and GHS1-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO1
OBC1	Electric Heat Stage 2	GHS2-1 and GHS2-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO2
OBC2	Electric Heat Stage 3	GHS3-1 and GHS3-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO3
OBC3	Electric Heat Stage 4	GHS4-1 and GHS4-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO4
OBC4	Electric Heat Stage 5	GHS5-1 and GHS5-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO5
OBC5	Electric Heat Stage 6	GHS6-1 and GHS6-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO6

Appendix K – ART 6-8 (CAV-DTC) Wiring Table

MicroTech I ADI Digital Inputs	MicroTech I Component	Label	Special Notes	MicroTech III Wiring Location
A0	Supply Air Temperature Sensor (DAT)	N/A	SAT Sensor Removed and Replaced	MCB-AI1
A1	Return Air Temperature Sensor (RAT)	N/A	RAT Sensor Removed and Replaced. Note: Not used with ART8 code.	MCB-AI2
A2	Outside Air Temperature Sensor (OAT)	N/A	OAT Sensor Removed and Replaced	MCB-AI3
A3	Zone Temperature Sensor (ZNT1)	N/A	ZNT 1 Sensor Removed and Replaced	MCB-X3 and MCB-X4
A4	Mixed Air Temperature Sensor (MAT)	N/A	MAT Sensor Removed. MicroTech III does not use MAT sensor with RPS units.	N/A
A5	Zone Temperature Sensor (ZNT2)	N/A	ZNT 2 Sensor Removed. MicroTech III does not allow multiple space temperature sensor inputs.	N/A
A6	Zone Temperature Sensor (ZNT3)	N/A	ZNT 3 Sensor Removed. MicroTech III does not allow multiple space temperature sensor inputs.	N/A
A7	Dirty Final Filter Sensor	N/A	SPS6 Sensor Removed and Discarded. Not used on MicroTech III.	N/A
A8	Dirty Pre-Filter Sensor	N/A	SPS5 Sensor Removed and Discarded. Not used on MicroTech III.	N/A
A9	External DAT Reset Signal	DAT Reset and DAT Reset - 2	If DAT Reset Signal is 0-10VDC, remove External DAT Reset Signal wires and label. If DAT Reset Signal is not this type of signal, it will not be able to be used with the MicroTech III.	MCB-X4 and M
A10	N/A	N/A	Not used on MicroTech I	N/A
A11	Outdoor Air Damper Position Feedback	N/A	Not used on MicroTech III.	N/A
A12	N/A	N/A	Not used on MicroTech I. Note: A12 is not used with ART8 code.	N/A
A13	Building Static Pressure (Optional)	N/A	Building Static Pressure Sensor (SPS2) on MicroTech I will need to be replaced because MicroTech III uses an SPS2 with 4-20mA signal output. SPS2 will be wired to the RF/EF Variable Frequency Drive. Note: A13 is not used with ART8 code.	RF/EF Variable Frequency Drive
A14	External OA Damper Position Reset Signal	OA Reset -1 and OA Reset -2	Note: A14 may be input for CO2 or OA Flow on MicroTech III. Technician will need to know if the signal into A14 is appropriate for an input to the MicroTech III for OA Damper control. Note: A14 is not used with ART8 code.	MCB-X1 and M
A15	N/A	N/A	Not used on MicroTech I.	N/A

MicroTech I ADI Digital Inputs (ART6)	MicroTech I Component	Label	Special Notes	MicroTech III Wiring Location
D0	Outside Air Enthalpy Relay Switch Input	OAER Switch Output (Also label 24VAC + and 24 VAC Common for switch)	OAER Switch (24V out) and RAE sensor will be kept and wires labeled. Note: Not used with ART7 code.	MCB-X5
D1	Tennant Override Input	Tennant Override	Keep, Tennant Override switch has correct voltage (24V)	DI3
D2	N/A	N/A	Not Used on MicroTech I	N/A
D3	Remote Cool Enable (Optional)	N/A	Not Used on MicroTech III	N/A
D4	Remote Heat Enable (Optional)	N/A	Not Used on MicroTech III	N/A
D5	Refrigeration Circuit #1 Alarm	N/A	Remove and Dispose. DI5 (R-HP1) on MicroTech III needs 120V. On MicroTech I, R5 circuit is 24V to D5. R5 relay contacts can be reused as HP1 relay in MicroTech III.	MCB-DI5
D6	Refrigeration Circuit #2 Alarm	N/A	If second refrigeration circuit exists, Remove and Dispose wire from D6. D6 (R-HP2) on MicroTech III needs 120V. On MicroTech I, R6 circuit is 24V to D6. R6 relay contacts can be reused as HP2 relay in MicroTech III.	MCB-DI6
D7	Duct High Limit (DHL) Input	N/A	Keep DHL switch. R63 relay will need to be added in series with DHL switch. NO R63 relay contacts will be wired into SAF Variable Frequency Drive start enable circuit.	24 VAC and Common Circuit, SAF Variable Frequency Drive
D8	Airflow Status (PC7)	PC7	Keep PC7 Switch, but do not keep it wired to 24V or D8. MicroTech III wiring PC7 is a dry circuit. Label PC7 input and output PC7 wires.	MCB-DI1 and M
D9	Gas Furnace Flame Failure Alarm	N/A	Heat Alarm is not available on MicroTech III	N/A
D10	Freeze Alarm	N/A	Remove and Replace. FS1 is NC on MicroTech III.	MCB-X5
D11	Smoke Alarm	NC Smoke Detector Contacts	Keep NC Smoke Detector contacts. Remove D11 wire from board and label. 24VAC will remain.	MCB-DI4
D12	N/A	N/A	Not Used on MicroTech I	N/A
D13	N/A	N/A	Not Used on MicroTech I	N/A
D14	N/A	N/A	Not Used on MicroTech I	N/A
D15	N/A	N/A	Not Used on MicroTech I	N/A

MicroTech I ADI Digital Inputs (ART8)	MicroTechI Component	Label	Special Notes	MicroTech III Wiring Location
D0	N/A	N/A	Not used on MicroTech I.	N/A
D1	Tennant Override Input	Tennant Override	Keep, Tennant Override switch has correct voltage (24V)	MCB-DI3
D2	N/A	N/A	Not Used on MicroTech I	N/A
D3	Remote Cool Enable (Optional)	N/A	Not Used on MicroTech III	N/A
D4	Remote Heat Enable (Optional)	N/A	Not Used on MicroTech III	N/A
D5	Refrigeration Circuit #1 Alarm	N/A	Remove and Dispose. DI5 (R-HP1) on MicroTech III needs 120V. On MicroTech I, R5 circuit is 24V to D5. R5 relay contacts can be reused as HP1 relay in MicroTech III.	MCB-DI5
D6	Refrigeration Circuit #2 Alarm	N/A	If second refrigeration circuit exists, Remove and Dispose wire from D6. D6 (R-HP2) on MicroTech III needs 120V. On MicroTech I, R6 circuit is 24V to D6. R6 relay contacts can be reused as HP2 relay in MicroTech III.	MCB-DI6
D7	N/A	N/A	Not Used on MicroTech I	N/A
D8	Airflow Status (PC7)	PC7	Keep PC7 Switch, but do not keep it wired to 24V or D8. MicroTech III wiring PC7 is a dry circuit. Label PC7 input and output PC7 wires.	MCB-DI1 and M
D9	Gas Furnace Flame Failure Alarm	N/A	Heat Alarm is not available on MicroTech III	N/A
D10	Freeze Alarm	N/A	Remove and Replace. FS1 is NC on MicroTech III.	MCB-X5
D11	Smoke Alarm	NC Smoke Detector Contacts	Keep NC Smoke Detector contacts. Remove D11 wire from board and label. 24VAC will remain.	MCB-DI4
D12	N/A	N/A	Not Used on MicroTech I	N/A
D13	N/A	N/A	Not Used on MicroTech I	N/A
D14	N/A	N/A	Not Used on MicroTech I	N/A
D15	N/A	N/A	Not Used on MicroTech I	N/A

OBA Outputs	MicroTech I Component	Label	Special Notes	MicroTech III Wiring Location
OBA0	Remote Alarm Output	EXT Alarm 1, EXT Alarm 2	On MicroTechI, OBA0 is a NO contact that closes when an alarm is present. On the MicroTech III, DO9 is a NO contact that closes when the alarm is present. Technician should remove wires from OBA0 and reinstall on DO9 circuit. Note: Must install terminal blocks for DO7-DO10 functionality.	MCB-DO9
OBA1	Cool 1	MCB-DO1 and MCB-C1	Depending on the specific unit options, OBA1 may be used as the Compressor #1, Start/Stop for the following configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA1 and label MCB-DO1 and MCB-C1.	MCB-DO1
	Cool 1	EXPC-DO1 and EXPC-C1	Depending on the specific unit options, OBA1 may be used as the Compressor #1, Start/Stop for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA1 and label EXPC-DO1 and EXPC-C1.	EXPC-DO1
OBA2	Cool 2	MCB-DO3 and MCB-C3	Depending on the specific unit options, OBA2 may be used as the Compressor #2, Start/Stop for the following configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA2 and label MCB-DO3 and MCB-C3.	MCB-DO3
	Cool 2	EXPC-DO3 and EXPC-C3	Depending on the specific unit options, OBA2 may be used as the Compressor #2, Start/Stop for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA2 and label EXPC-DO3 and EXPC-C3.	EXPC-DO3
OBA3	Heat 1 On/Off or Heat Enable	EXPB-DO1 and EXPB-C1	Depending on the specific unit options, OBA3 may be used as the first stage Heat On/Off or Heat Enable. Remove both wires from OBA3 and label EXPB-DO1 and EXPB-C1.	EXPB-DO1
OBA4	Heat 2: Heat Valve Close	N/A	Depending on the specific unit options, OBA4 may be used as the close valve signal for floating point control. MicroTech III uses 0-10 VDC signal to VM1 for capacity. May need to replace VM1 if it cannot accept 0-10VDC signal. Remove R23 relay.	N/A
	Heat 2 On/Off	EXPB-DO2 and EXPB-C2	Depending on the specific unit options, OBA4 may be used as the Heat 2 On/Off signal for staged heat configurations. Remove both wires from OBA4 and label EXPB-DO2 and EXPB-C2.	EXPB-DO2

OBA5	Heat 3: Heat Valve Open	N/A	Depending on the specific unit options, OBA5 may be used as the open valve signal for floating point control. MicroTech III uses 0-10 VDC signal to VM1 for capacity. May need to replace VM1 if it cannot accept 0-10VDC signal. Remove R23 relay.	N/A
	Heat 3 On/Off	EXPB-DO3 and EXPB-C3	Depending on the specific unit options, OBA5 may be used as the Heat 3 On/Off signal for staged heat configurations. Remove both wires from OBA5 and label EXPB-DO3 and EXPB-C3.	EXPB-DO3
OBA6	VAV Box Output	N/A	VAV Box-Output is not used on MicroTech III.	N/A
	Heat 4 On/Off (ART8)	EXPB-DO4 and EXPB-C4	Depending on the specific unit options, OBA6 may be used as the Heat 4 On/Off signal for staged heat configurations. Remove both wires from OBA6 and label EXPB-DO4 and EXPB-C4.	EXPB-DO4
OBA7	Outdoor Air Damper Close	N/A	Floating Point BOs not used on MicroTech III. Note: Economizer ACT 3 may need to be replaced if it cannot accept analog signal. 0-10VDC signal to OA Damper ACT3 will come from MCB-X7.	N/A
OBA8	Outdoor Air Damper Open	N/A	Floating Point BOs not used on MicroTech III. Note: Economizer ACT 3 may need to be replaced if it cannot accept analog signal. 0-10VDC signal to OA Damper ACT3 will come from MCB-X7.	N/A
OBA9	Cool 3	MCB-DO2 and MCB-C3	Depending on the specific unit options, OBA9 may be used as the Compressor #3, Start/Stop for the following configurations: 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA9 and label MCB-DO2 and MCB-C3.	MCB-DO2
	Cool 3	EXPC-DO2 and EXPC-C2	Depending on the specific unit options, OBA9 may be used as the Compressor #1 Unloader #1, On/Off for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA9 and label EXPC-DO2 and EXPC-C2.	EXPC-DO2
OBA10	Cool 4	MCB-DO2 and MCB-C3	Depending on the specific unit options, OBA10 may be used as the Compressor #4, Start/Stop for the following configurations: 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA10 and label MCB-DO4 and MCB-C4.	MCB-DO4
	Cool 4	EXPC-DO2 and EXPC-C2	Depending on the specific unit options, OBA10 may be used as the Compressor #2 Unloader #1, On/Off for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA10 and label EXPC-DO4 and EXPC-C2.	EXPC-DO4
OBA11	Return Fan Airflow Decrease	N/A	Floating Point BOs not used on MicroTech III. Note: RF ACT 2 will not be used on MicroTech III.	N/A
	Cool 5 (ART8 Only)	EXPA-DO1 and EXPA-C1	Depending on the specific unit options, OBA11 may be used as the Compressor #6, Start/Stop for the following configuration: 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA11 and label EXPA-DO1 and EXPA-C1.	EXPA-DO1
OBA12	Return Fan Airflow Increase	N/A	Floating Point BOs not used on MicroTech III. Note: RF ACT 2 will not be used on MicroTech III.	N/A
	Cool 6 (ART8 Only)	EXPA-DO2 and EXPA-C2	Depending on the specific unit options, OBA12 may be used as the Compressor #6, Start/Stop for the following configuration: 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBA12 and label EXPA-DO2 and EXPA-C2.	EXPA-DO2
OBA13	Supply Fan Start/Stop	MCB C5-6 and MCB DO5	Remove both wires from OBA13 and label MCB C5-6 and MCB DO5.	MCB C5-6 and MCB DO5
OBA14	RF Start/Stop (ART8, output not used)	N/A	MicroTech III RPS does not have across the line RF/EF motors. Start/Stop and M20 contactors will not be used on MicroTech III. Instead, a RF/EF Variable Frequency Drive will need to be added to unit. Start/Stop will come from Modbus. Note: OBA14 not used with ART8 code.	N/A
OBA15	Occupied Output	Fan Op 1, Fan Op 2	On MicroTechI, OBA15 is a NO contact that closes when fans are on. On the MicroTech III, DO10 is a NO contact that closes when the fans are on. Technician should remove wires from OBA15 and reinstall on DO10 circuit. Note: Must install terminal blocks for DO7-DO10 functionality.	MCB-D010

OBB Outputs	MicroTech I Component	Label	Special Notes	MicroTech III Wiring Location
OBB0	Cool 1	MCB-DO1 and MCB-C1	Depending on the specific unit options, OBB0 may be used as the Compressor #1, Start/Stop for the following configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB0 and label MCB-DO1 and MCB-C1.	MCB-DO1
	Cool 1	EXPC-DO1 and EXPC-C1	Depending on the specific unit options, OBB0 may be used as the Compressor #1, Start/Stop for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB0 and label EXPC-DO1 and EXPC-C1.	EXPC-DO1

OBB1	Cool 2	MCB-DO3 and MCB-C3	Depending on the specific unit options, OBB1 may be used as the Compressor #2, Start/Stop for the following configurations: 2-Compressor/2-Stage, 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB1 and label MCB-DO3 and MCB-C1.	MCB-DO3
	Cool 2	EXPC-DO3 and EXPC-C3	Depending on the specific unit options, OBB1 may be used as the Compressor #2, Start/Stop for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB1 and label EXPC-DO3 and EXPC-C1.	EXPC-DO3
OBB2	Cool 3	MCB-DO2 and MCB-C2	Depending on the specific unit options, OBB2 may be used as the Compressor #3, Start/Stop for the following configurations: 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB2 and label MCB-DO2 and MCB-C2.	MCB-DO2
	Cool 3	EXPC-DO2 and EXPC-C2	Depending on the specific unit options, OBB2 may be used as the Compressor #1 Unloader #1, On/Off for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB2 and label EXPC-DO2 and EXPC-C1.	EXPC-DO2
OBB3	Cool 4	MCB-DO4 and MCB-C4	Depending on the specific unit options, OBB3 may be used as the Compressor #4, Start/Stop for the following configurations: 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB3 and label MCB-DO2 and MCB-C2.	MCB-DO4
	Cool 4	EXPC-DO4 and EXPC-C4	Depending on the specific unit options, OBB3 may be used as the Compressor #2 Unloader #1, On/Off for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB3 and label EXPC-DO4 and EXPC-C1.	EXPC-DO4
OBB3	Cool 4	MCB-DO4 and MCB-C4	Depending on the specific unit options, OBB3 may be used as the Compressor #4, Start/Stop for the following configurations: 4-Compressor/4-Stage, 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB3 and label MCB-DO2 and MCB-C2.	MCB-DO4
	Cool 4	EXPC-DO4 and EXPC-C4	Depending on the specific unit options, OBB3 may be used as the Compressor #2 Unloader #1, On/Off for the following configurations: 2-Compressor/6-Stage, or 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB3 and label EXPC-DO4 and EXPC-C1.	EXPC-DO4
OBB4	Cool 5	EXPA-DO1 and EXPA-C1	Depending on the specific unit options, OBB4 may be used as the Compressor #5, Start/Stop for the following configuration: 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB4 and label EXPA-DO1 and EXPA-C1.	EXPA-DO1
	Cool 5	MCB-DO2 and MCB-C2	Depending on the specific unit options, OBB4 may be used as the Compressor #1 Unloader #2, On/Off for the following configuration: 2-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB4 and label MCB-DO2 and MCB-C2.	MCB-DO2
	Cool 5	MCB-DO2 and MCB-C2	Depending on the specific unit options, OBB4 may be used as the Compressor #3 Start/Stop for the following configuration: 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB4 and label MCB-DO2 and MCB-C2.	MCB-DO2
OBB5	Cool 6	EXPA-DO2 and EXPA-C2	Depending on the specific unit options, OBB5 may be used as the Compressor #6, Start/Stop for the following configuration: 6-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB5 and label EXPA-DO2 and EXPA-C2.	EXPA-DO2
	Cool 6	MCB-DO4 and MCB-C4	Depending on the specific unit options, OBB5 may be used as the Compressor #2 Unloader #2, On/Off for the following configuration: 2-Compressor/6-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB5 and label MCB-DO4 and MCB-C4.	MCB-DO4
	Cool 6	MCB-DO4 and MCB-C4	Depending on the specific unit options, OBB5 may be used as the Compressor #4 Start/Stop for the following configuration: 4-Compressor/8-Stage. Please refer to IM 483 under “Controller Outputs” for more detailed information. If applicable, remove both wires from OBB5 and label MCB-DO4 and MCB-C4.	MCB-DO4
OBB6	Cool 7	N/A	7th Stage of Cooling is not available on the MicroTech III and not supported through this conversion document.	N/A
OBB7	Cool 8	N/A	8th Stage of Cooling is not available on the MicroTech III and not supported through this conversion document.	N/A

OBC Outputs	MicroTech I Component	Label	Special Notes	MicroTech III Wiring Location
OBC0	Electric Heat Stage 1	GHS1-1 and GHS1-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO1
OBC1	Electric Heat Stage 2	GHS2-1 and GHS2-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO2
OBC2	Electric Heat Stage 3	GHS3-1 and GHS3-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO3
OBC3	Electric Heat Stage 4	GHS4-1 and GHS4-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO4
OBC4	Electric Heat Stage 5	GHS5-1 and GHS5-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO5
OBC5	Electric Heat Stage 6	GHS6-1 and GHS6-2	MicroTech III supports general heating stages 1-6 through DOs on EXPB. Remove wires from OBC and label. See diagram for re-wiring to MicroTech III.	EXPB-DO6

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