

SIL-ALL-21-002

Date: January 25, 2021

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FOR INTERNAL & EXTERNAL USE

Microtech 4 Controller Software Upgrade Procedures

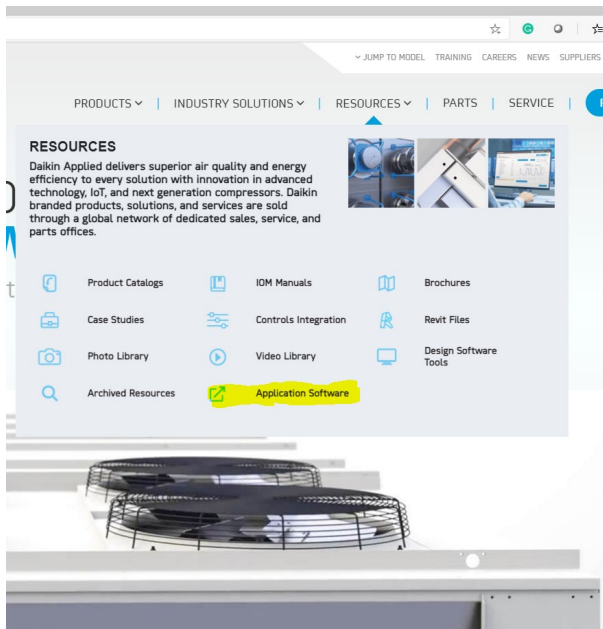
Use this procedure to upgrade the MicroTech 4 controller application software and firmware.

Tools Required:

- 3/64" (1 mm) Allen Key
- Straight Slot screw driver to open control panel door
- SD memory card no larger than 32GB formatted to FAT32 ([Click Here to Purchase](#))

Preparing the SD Card

1. To download the software code files online, navigate <http://www.daikinapplied.com>.
2. Click on the Resources Tab. Then scroll down and click on Application Software. Then click on Application Software for MT 4.

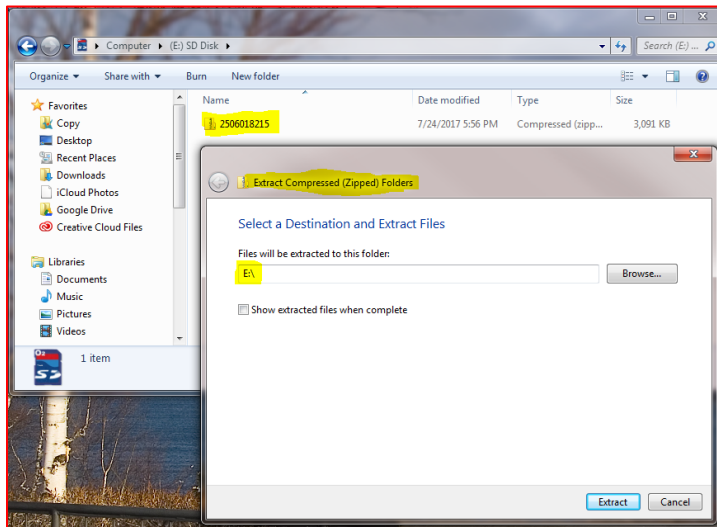


ROOFTOP SYSTEMS

- Application Software for Rebel Applied Rooftop with MicroTech 4 Controller 2506036105
- Application Software for Maverick II, RoofPak, and Self-Contained with MicroTech III Controls 2506017518
- Application Software for Rebel DPS with MicroTech III Controls - 2506018221
- Application Software for Rebel DPS with REFRIGERATION ONLY MicroTech III Controls (ROC) - 2506019103

3. Scroll down to find the appropriate software version to download and save it to the Desktop.
 - a. 2506036xxx represents Rebel Applied (DPSA)
Note: (XXX) changes as the software versions are revised for the respective product lines.
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.

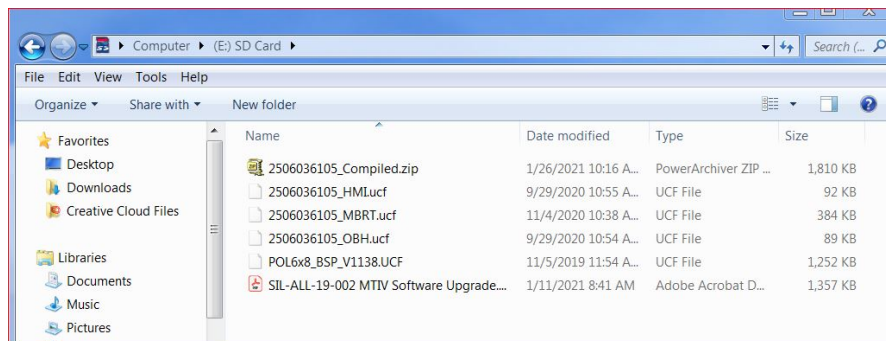
Note: Every computer will have a different drive letter designation for the SD card. Root directory represents the first location that appears when opening the SD card since the Microtech 4 controller cannot see files from any folders. Zip file names would change as mentioned in step 3 once new software versions are released.



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 shows 4 - 5 critical files needed for a software download.

• HML.ucf • MBRT.ucf • OBH.ucf • POL687.hex *(omitted after codes)*

Complete list of files including all critical ones shown below



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

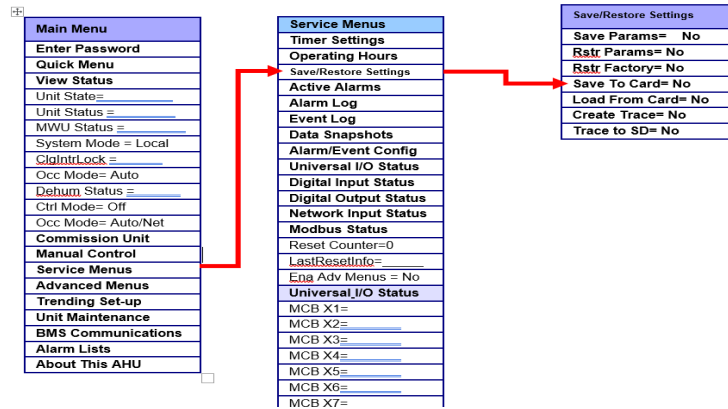
Saving Parameters to an SD Card

Note: DO NOT save parameters if the controller experienced a glitch in its operation and skip to the “Download Software to the Controller” section of this SIL

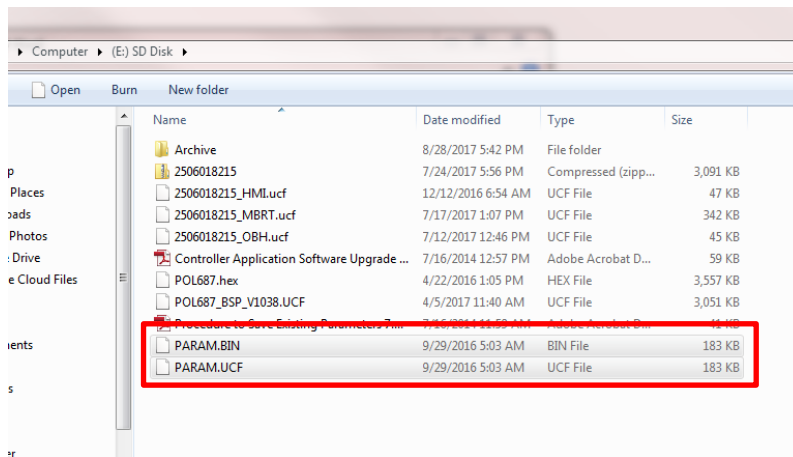
1. Enter the level 2 password.
2. From the Main Menu, **set the Control Mode to Off.**
3. Insert the SD memory card into the controller’s memory card slot.
 - a. The label on the card should be facing to the rear, toward the controller.



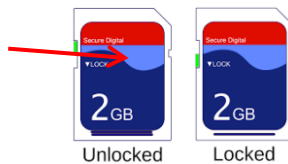
4. Save the existing configuration and parameters to the memory card.
 - a. From the Main Menu select Service Menus then Save/Restore Settings.
 - b. Set SaveToCard option to "Yes" and press the Enter button. Wait till "Yes" reverts to "No"



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



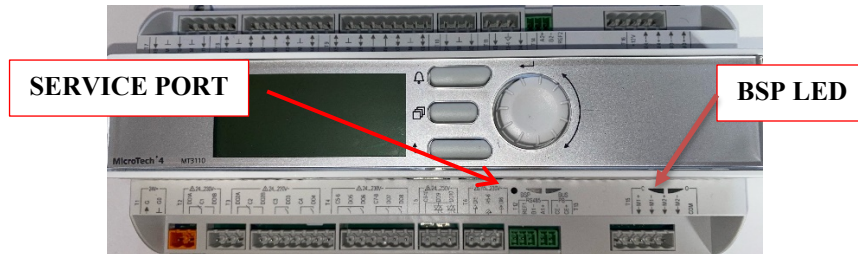
8. If the param files did not save then check the SD card lock or try a different SD card



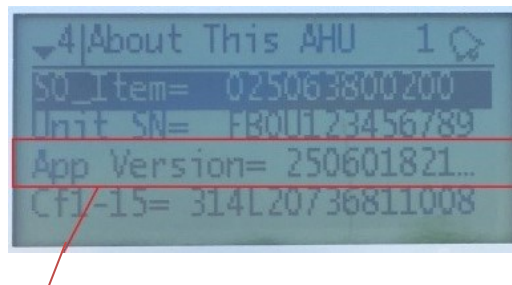
9. This completes saving parameters to the SD card

Downloading Software to the Controller

1. Enter the level 2 password.
2. From the Main Menu, **set the Control Mode to Off.**
3. Power the controller off and wait 90 seconds
4. Make sure that all communication modules that need to be updated are connected.
5. 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).



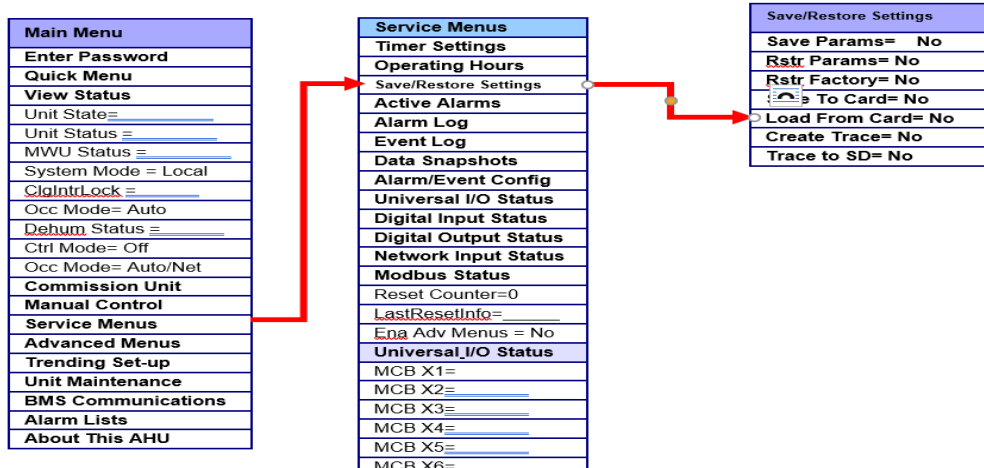
6. While holding the service button depressed, apply power to the controller.
7. Continue depressing the service button and observe the BSP LED begins to flash between red and green.
8. Release the service button after the flashing red/green sequence lasts for 3 or more cycles.
9. When the BSP LED's has stopped flashing between red and green check if the BSP LED is either off or amber.
 - a. If off then repeat the download process again after 90 seconds off time.
10. Cycle power to the controller after a solid amber BSP LED is present.
11. 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 (2506036xxx).
12. If APP version appears as shown, you will need to repeat steps above until APP version displays ALL 10 digits completely



App Version **MUST display all 10 digits.** If displayed as shown above, Software is corrupt and must be reloaded.

Restoring Parameters to the Controller

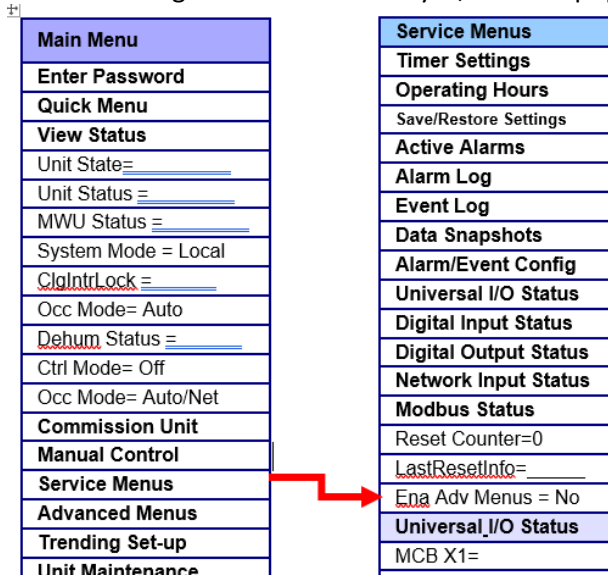
1. Make sure the SD memory card is still within the controller's memory card slot.
2. Enter the Level 2 Password.
3. From the Main Menu select Service Menus then Save/Restore Settings.
4. Set the LoadFromCard parameter to Yes, and press the enter button.
 - a. The controller will reset twice but may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



- 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.
- Once the restore process is complete, remove the SD memory card by momentarily pushing it in and releasing to retract.
- This completes the parameter restore from SD card process

Manually Programming the Unit Configuration

- If a Save and Restore was not performed then setup the unit per the software configuration sticker installed on the unit door.
 - Description of each configurator value is shown under the "Unit Configuration Menu" list below.
 - OM 1288 also contains the unit configuration menu.
- Enter the Level 2 Password.
- From the Main Menu select Service Menu.
- From Service Menu change Ena Adv Menu to yes, This will populate the advanced Menu in the Main Menu.



- Navigate: Main Menu\Advanced Menu\Unit Configuration
- Scroll through each option within the Unit Configuration menu, changing any parameters not matching the software configuration sticker on the door.

Advanced Menus	Unit Configuration
Unit Set-Up	Apply Changes = No
Advanced Timers	Control Type =
SAF Set-Up	Fixed Comps=
RFEF Set-Up	Var Comps=
HtgClg ChgOvr Set-Up	Clg Circuits=
Cooling Set-Up	OAFanCfg=
CW Clg Set-Up	Damper Type=
VCmp Circ 1 Set-Up	Heating Type=
VCmp Circ 2 Set-Up	Max Heat Rise=
Econo Set-Up	SAF Type=
OA Damper Set-Up	RFEF Type=
Heating Set-Up	Energy Rec=
OAF Circ1 Set-Up	Reheat Type=
OAF Circ2 Set-Up	ExtOAlnput=
EVI Circ1 Set-Up	OAFLOW Input=
EVI Circ2 Set-Up	SAFLOW Input=
Reheat Set-Up	RFEFFLOW Input=
Energy Rec Set-Up	StaticPCfg=
Relief Damper Set-Up	SpaceT.Cfg=
CO2 Sensor Set-Up	Unit Size=
Power Monitor	Monitor Pkgs=
Sensor Offsets	EHGBP Cfg=
IP Set-Up	Refrig Type=
HMI Set-Up	Unit Voltage=
Unit Configuration	Apply Changes= No

- Once all the values under the Unit Configuration menu are confirmed, set the Apply Changes parameter to Yes and press the enter button.
- The controller will perform an automatic reset
- 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.
- This completes the manual programming process.
- Proceed with setting up individual setting to commission the unit as required for the application.

UNIT CONFIGURATION

Configuration Code Position	Description	Values (Default in Bold)	Notes
1	Control Type	0= Zone Temperature Control (ZTC) 1= Discharge Temperature Control (DTC) 2= Single Zone VAV Control (1ZnVAV) 3= Refrigeration Only Control (RefOnly)	
2	Fixed Compressors	0-6	The number of fixed compressors on the unit
3	Variable Compressors		The number of variable compressors on the unit.
4	Cooling Circuits	0-4	The number of cooling circuits on the unit.
5	OAFanCfg	0=None 1=OnOffT 2= OnOffP 3=VarVFD 4=VarECM1 5=VarECM2	The Type of Condenser Fan Control The unit is equipped for.
6	Damper Type	0=None 1=Single Position 0-30% (30OA) 2=Single Position 100% (100OA) 3=Modulating Economizer Airside (Econ) 4= Modulating Economizer Airside with FDD (EconFDD)	The Type of Outdoor Air Damper on the equipment.

Configuration Code Position	Description	Values (Default in Bold)	Notes
7	Heating Type	0=None 1=F&BP Control (F&BP) 2=Steam or Hot Water (HW_Stm) 3=Modulated Gas, 200 5-1 (L200) 4=Modulated Gas, 400 5-1 (L400) 5=Modulated Gas, 600 5-1 (L600) 6=Modulated Gas, 400 10-1 (H400) 7=Modulated Gas, 600 10-1 (H600) 8=Modulated Gas, 800 10-1 (L800) 9=Modulated Gas, 1200 10-1 (L1200) A=Modulated Gas, 800 20-1 (H800) B=Modulated Gas, 1200 20-1 (H1200) C=2 Stage Electric (2StgE) D=2 Stage Gas, 2/400 (S2/400) E=4 Stage Electric (4StgE) F=4 Stage Gas, 600 (S600) G=SCR Electric (SCR)	The Type of Heat the unit is equipped for.
8,9,10	Max Heat Rise	Three Digits (Default = 100, Range 0-100))	Temperature rise of the heat configuration. Do not change.
11	SAFType	0=Analog (Anlg) 1= 1 ECM Modbus Fan (1ECMMB) 2= 2 ECM Modbus Fans (2ECMMB) 3= 3 ECM Modbus Fans (3ECMMB) 4= 4 ECM Modbus Fans (4ECMMB)	The quantity of Master VFD or ECM Supply Fans in the unit
12	RFEFType	0=None 1=RF Analog (RFAnlg) 2=EF Analog (EFAnlg) 3= 1 ECM Modbus Return Fan (1ECMRF) 4= 2 ECM Modbus Return Fans (2ECMRF) 5= 3 ECM Modbus Return Fans (3ECMRF) 6= 4 ECM Modbus Return Fans (4ECMRF) 7= 1 ECM Modbus Exhaust Fan (1ECMEF) 8= 2 ECM Modbus Exhaust Fans (2ECMEF) 9= 3 ECM Modbus Exhaust Fans (3ECMEF) A= 4 ECM Modbus Exhaust Fans (4ECMEF) B= Return Fan VFD Modbus (RFVFD) C= Exhaust Fan VFD Modbus (EFVFD)	The quantity of Master VFD or ECM Return or Exhaust Fans in the unit
13	ER Config	0=None 1=Constant Speed Wheel (CS) 2=Constant Speed Wheel w/ RH (CSRH) 3=1 ECM Modbus (1ECM) 4=2 ECM Modbus (2ECM) 5=VFD Modbus (VFD) 6=Analog (Anlg)	The energy recovery configuration in the unit.

Configuration Code Position	Description	Values (Default in Bold)	Notes
14	Reheat Type	0=None 1=Primary Heat Reheat (PriHtg) 2=Primary Heat Reheat w/DXBP (PriHtBP) 3=Modulating Hot Gas (MHG) 4=Modulating Hot Gas w/DXBP (MHGBP) 5=Modulating Hot Gas & Liquid Subcooling Reheat (HG_LSC) 6=Modulating Hot Gas & Liquid Subcooling Reheat w/DXBP (HGLSCBP) 7=DX Bypass Only (DXBP) 8=Modulating Liquid Subcooling Reheat (MLSC)	The type of reheat the unit is equipped with. Note: Config 1 requires a modulating primary heat source. Configuration 4 and 6 require OA Damper Type to be equal to 2
15	ExtOA Input	0=None 1=ExtVDC 2=ExtmA 3=CO2VDC 4=CO2mA 5=CO2QMX+	The ExtOA Input sets the Source Type for the External OA Damper Reset which is either a external signal, CO2 Sensor or a Network CO2 Sensor (QMX+)
16	OA Flow Input	0=None 1=VDC 2=mA	The OA Flow Input sets the single received for the OA Flow Measuring Station
17	SA Flow Input	0=None 1=1Fan 2=2Fan 3=3Fan 4=4Fan 5=6Fan 6=8Fan 7=9Fan 8=12Fan 9=16Fan	The SA Flow Input sets the quantity of Fans used with supply fan air flow measuring.
18	RFEF Flow Input	0=None 1=1Fan 2=2Fan	The RFEF Flow Input sets the quantity of Fans used with Return Fan or Exhaust fan air flow measuring.
19	StaticPCfg	SAFSPS:RFEFSPS 0=NA:NA 1=DSP:NA 2=DSP:DSP 3=DSP:BSP 4=BSP:NA 5=NA:DSP 6=NA:BSP	StaticPCfg sets the quantity and type of static pressure sensors the unit is equipped with for purposes of supply and exahust or return fan control.

Configuration Code Position	Description	Values (Default in Bold)	Notes
20	SpaceTConfig	0=None 1=1 Sensors (1AI) 2=2 Sensors (2AI) 3=3 Sensors (3AI) 4=1 Sensors Space Temp Only (1QMXS) 5=2 Sensors Space Temp Only (2QMXS) 6=3 Sensors Space Temp Only (3QMXS) 7=1 Sensors Space/Hum/CO2 (1QMX+) 8=2 Sensors Space/Hum/CO2 (2QMX+) 9=3 Sensors Space/Hum/CO2 (3QMX+)	SpaceT Config sets the quantity and type of space temperature sensors the unit is configured to use.
21,22,23	Unit Size	Three digits (default 050, Range 0-999)	The unit model size.
24	MonitorPkgs	0=None 1=Refrig System Only (RefSys) 2=Power Monitor (Pwr) 3=Refrig System and Power Monitor (Ref&Pwr)	Monitor Pkgs indicates which monitoring sensors the unit has been equipped with.
25	EHGBPCfg	0=None 1=Circ12 2=Circ1 3=Circ2	EHGBPCfg shows which circuits have an electronically controlled Hot Gas Bypass Valve.
26	Refrig Type	0=None 1=R410A	The Type of Refrigerant the unit is shipped with
27	Unit Voltage	0=208/60Hz 1=230/60Hz 2=460/60Hz 3=575/60Hz	The Voltage of the equipment
28	Preheat Type	0=None 1=HW_Stm 2=F&BP	The type of heat mounted in the preheat position; upstream of the cooling coil.
29	EV Type	0=None 1= DFETS 2=FjA 3=FjB 4=SpLn	The type of expansion valve used
30	Apply Changes	=Yes =No	Saves configuration