



SOFTWARE RELEASE NOTES

MCS-MAGNUM

Version 17.62S

04/20/2020

Updates from previous versions:

New Features:

1. HVAC Firmware only - Working on Support for 6 EXV - Add logic in the 1 second algo to calculate EXV #3-#6 superheats.
2. HVAC Firmware only - Working on supporting 6 exv per comp - Add logic to do lockout reset on EXV #3 -#6.
3. HVAC Firmware only - Working on adding support for 6 exv per comp - start add logic into the recip and screw logic in HVAC firmware.
4. REFR Firmware only - made a change in the source code to declare a temp variable once instead of multiple times.
5. HVAC firmware only - Shared VFD comp only - add a 5 second time delay when switch from DOL back to VFD.
6. HVAC Firmware only - Continue work on add support for 6 EXVs. Add low and high superheat safeties for all 6 exvs.
7. HVAC Firmware only - add a time delay on the amp test for allowing the condenser fans to run. When amp are seen allow the fans to run for 5 seconds after amp are less than the low amp% setpoint times the comp FLA setpoint.
8. HVAC Firmware only - Add support for multiple comps on sharing a chilled water valve, ie module chiller, with each module have multiple comps and single chilled water heater exchanger with a single chilled water isolation value. New fields in config to setup are "Pump/valve Evap Group" and "Pump/Valve Proof". if prrof is "Not used" then a fixed 60 delay is forced between cw valve openign and start of chilled water pump.
9. Added new refrigerant type R407F
10. HVAC- Turbocor for Petra Acumatica case: 001888, RE: Turbocor Chiller Last requested Modification.

Any questions regarding this release, contact:

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11. -HVAC firmware only - Chilled water valve delay without a proof input was hard coded at 60 second. Now if the setpoint #10-5 is active and its time field is greater than 10, the time field is used., otherwise it defaults to 60 seconds. Before the logic always default to 60 seconds without a proof input.

Bug Fixes:

1. HVAC only: Problem reported by D2 "Attached config where RO staged process pumps won't turn on. May or may not be a config issue. I've never set it up and couldn't find an example config using it."
2. 2nd EXV on compressor #2 constantly getting set to its start% every 30 seconds. Exv will start @35%, then go to 36.X%, then 15sec later it's back at 35% with no changes to superheat. 1st and 3rd Exv's look normal.
3. HVAC only: "Attached config where RO staged process pumps won't turn on. May or may not be a config issue. I've never set it up and couldn't find an example config using it."
4. HVAC firmware only - Shared VFD comp Type only - Correct issue with VFD amp index, must always use circuit #1(0) VFD amp index, only #1 is setup for shared VFD.
5. Rotating Coil:
 - 1: 3+ EXV's, no EXV screen for the 3rd EXV on the keypad
 - 2: Only LLS (No EXV's), Setpoint #134 (evap rotation time) value is divided by 2
 - 3: Coils don't pickup where they left off in the rotation. EG: if a compressor is running coils 2, 3, &4... and is called to shut down on capacity, it'll start back up with coils 1, 2, &3. need to start with the same coils (and rotation time) as it shut off at.
6. Correct issue caused after adding support for 6 EVX in recip pump down state, placed the parentheses in the wrong spot. Need to be before the call to set_state_to_anticycle
7. HVAC firmware only - In Fixed Step/VFD logic(recip) comp logic "Cmp In Startup" state change the fast unloader relay logic to use the comp unload delay setup in the Mag HVAC Comp page instead of hard code 5 seconds.
8. HVAC firmware only - Shared VFD comp only - add delay on turn off the DOL relay when switch back to VFD. Wait for the VFD proof to turn on indicating the comp is running on VFD before turning off the DOL relay.
9. RTU-TStat: Added code to determine which setpoints are the controlling values for cooling and heating based on the enable and control sensors.
10. Changed is_si_digital test to check if SI index is valid
11. HVAC firmware only - Correct issue with EXV #3 not having the correct target because the circuit index were not been reset back to the based circuit.

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12. All firmware versions - Change the TARGET AO USER Logic to PID AO USER LOGIC. Can has 32 user logic PID control Analog outputs.
13. HVAC Firmware only - Shared VFD comps only - correct issue with the cond fan logic - when the comp is switched from DOL back to VFD the comp mode is switched to VFD and cond logic was looking at the mode to determine which amp sensor to use, VFD or the MCS CT. Change the test to only use the VFD amps if in VFD mode and VFD proof was on, indicating the VFD is not running and it ok to use VFD amps.
14. Logic Change - HVAC Firmware only - Shared VFD comp type only - Change the logic to use the VFD amp sensor if the VFD's sensor input proof is ON. This gives the device syncing the VFD/DOL time to switch. Also do not turn off the DOL relay based on the proof input, instead use a fix 5 second delay. The device syncing VFD/DOL will not switch if DOL stays on.
15. "Looks like the RTC in the magnum did not handle leap year. All the magnum are 1 day ahead.
16. Corrected PT chart for R422D and R417A High temp values
17. HVAC Firmware only - Continued work on chilled water valve logic with multiple comp per valve.
18. - HVAC firmware only - Correct issue with no valve proof ticker and no flow ticker when setup with multiple comp per valve. The valve ticker for the whole group was not being setup, only the comp that turn on the valve was get setup correct- this was causing a valve proof alarm too quick, correct safety time was not being used - was getting 2 second delay used for when after valve was proofed open.
19. HVAC firmware only - Correct alarm generated when CW valve logic faulted on no flow - it was posting no valve proof alarm.
20. Multiple EXV control: - When testing the 6 valve exv logic per circuit I found that the low superheat alarm is being triggered for every valve you have. Also the timer seems to be messed up and tripping one compressor at a time on each circuit. As you can see in the picture A2 tripped 60 seconds after I lowered my superheat and A1 tripped another 60 seconds later. The setpoint is setup at 120 seconds so its cutting it in half. I've also seen it trip the first compressor after the full timer and then run through the timer again before tripping the second compressor.

HVAC: Reported by D2 on 3/25/2020 "Carlos, In testing I found that if any of the three EXV's go below the low superheat setpoint circuit #1 will trip on low superheat. Circuit #2 will never trip on low superheat based on the coil superheats. HVAC.

Removed code that was forcing the staging valve to 100% if control SI is below the control target and requested power is less than actual power for more than 30 seconds

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21. HVAC only - corrected the no flow and no valve proof logic to use the correct fields in setpoint #105. No flow will use the value filed like the old firmware does. And the new no proof fault will using the #105 time field.
22. :If the compressor starts with the suction pressure below the pump down setpoint... the LLS's never turn ON.
23. Reported by Jeff "Screw compressor isn't going into a low suction unload? I have the compressor wanted% at 100, and actual% at 93. Low suction setpoint is 28psi, with the unload setpoint at 2... when my suction pressure is at 29, nothing happens?? Not trying to unload at all."
24. Reported by Jeff: As per IVI we need to keep the chiller_eerom.defrost_on_relay ON during recip_circuit_drip_down.
25. Cent Firmware only - Worked on supporting Multiplier VFD centrifugal compressors. Made the following changes to correct the issue D2 found during testing:
26. Reported by Jeff . Testing a rotating coil config with screw compressors and EXV's.

. Uddated version # to 17.62S

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