

IntelliPak Symbio 800™ Release Notes

Symbio 800™ Version 1.10. __ Revision A, Release Date - 11/08/2018

- Initial release for IPAK

Symbio 800™ Version 1.10. __ Revision B, Release Date - 01/9/2019

- Patch release for IPAK memory allocation issues.

Symbio 800™ Version 1.20. __ Revision C, Release Date - 11/25/2019

New Equipment Configurations Supported

- 20 Ton Standard Efficiency unit configuration
- SCR Electric Heat
- 1.2M MBH Gas Heat
- External Heat
- Rapid Restart
- External Fan Control (Supply & Relief)
- LON Communication
- BAYSENS 800 Programmable Sensor

New Features & Enhancements

- Enhancements to improve Memory Management
- Added Max Heat via Heat Cool Mode Request. A commanded Max Heat mode will drive the unit to full supply fan speed.
- Added Variable speed compressor Current limit.
- Applies to multiple compressor circuits with a variable speed compressor.
 - The VSPD compressor will be limited to a lower operating speed to limit the VFD current. If there is a need to lower the current still, Limit control action stages off a fixed speed compressor to decrease variable speed current limit.
 - The objective is to reduce circuit capacity, which reduces discharge pressure and variable speed compressor motor current to prevent VFD current limit control.
- Modulating Airflow – Modulating Airflow is now supported for all Modulating Heat Types (VVDA, CVDA units)
- PSIG –Now supported as a unit of pressure
- Single EXV Enhancements
- Dual EXV Enhancements
- Local Zone Panel Enhancements
 - Customers that do not have a local: Heating Setpoint, Cooling Setpoint, Mode Input, Temperature Input; will no longer see warning diagnostics in the alarms.
- Space Temperature Control – added Discharge Air Temperature Limits
 - To create flexibility in SZVAV Space Temperature Control, a user settable, Discharge Air Temperature Minimum Cool/Heat Limits & Discharge Air Temperature Maximum Cool/Heat Limits are provided. These points allow the user to limit the control calculated the Discharge Air Temperature setpoint within the specified ranges. These limits can be set through BACnet or the TD7.
- New points/settings:
 - Discharge Air Temperature Maximum Heat Limit
 - Discharge Air Temperature Minimum Heat Limit (new)
 - Discharge Air Temperature Maximum Cool Limit (new)
 - Discharge Air Temperature Minimum Cool Limit
- Superheat High Limit Lockout
 - This function detects excessive refrigerant loss by comparing suction superheat to a high limit threshold.
- The detection method reduces the potential for nuisance trips by providing a startup ignore time

that is a function of the outdoor air temperature. This approach helps to mitigate false detection trips because low suction saturated temperature and high superheat is normal following startup at low outdoor air temperature conditions.

- This feature can be enabled/disabled, in the TD7 & TU , for extreme operating condition applications (such as data centers) that are susceptible to false trips.
 - There is a settable threshold that can be set in the TD7 & TU which allows adjustment between 50F – 65F. This threshold allows the user to make changes to help prevent nuisance trips.
- Improved part-load unit efficiency, please change the following *Service Setting* changes for existing units.
 - Cond Fan Control Cool Diff Press Setpt- New value = 90 psid (620.53 kPa)
 - Cond Fan Control Reheat Diff Press Setpt- New value = 250 psid (1723.69 kPa)
 - Cond Fan Control Cool Press Ratio Setpt- New value = 1.55
- Updated Diagnostic Handling
- Support for Outdoor Airflow Calibration Gain and Offset parameters.

Symbio 800™ Version 1.20.__ Revision D, Release Date - XX

- Not released to production. Only shared with specific job sites. Shared with Florida jobs that experienced supply air pressure solenoid failures.
- Application changes:
 - Hex I/O update to support changing Supply air pressure range. Supply air pressure will not zero when set to .5 -5 IWC.
 - Updated Filter monitoring to start from 0 IWC.
 - Fixed various BACnet points that were not properly updating.
 - Adjusted startup sequence to increase air flow prior to starting gas heat

Symbio 800™ Version 1.30.__ Revision E, Release Date – 06/30/21

- Includes features listed in Revision D for production
- Application changes:
 - Security update.

Symbio 800™ Version 2.00.__ Revision F, Release Date – 07/11/22

New Equipment Configurations Supported

- Dual Power Meter
- Dew Point Dehumidification
- Hot Water & Steam Heat
- External Fan Control (Supply & Relief) Support for Hot Water & Steam Heat
- Relief High with Barometric Dampers (Valid on IPAK I configuration only)
- HEX I/O LLID: MKL13 & MKL17 microprocessor support
- Return Fan
- Isolation Dampers
- Differential Dry Bulb

New Features & Enhancements

- Duct Static Pressure Sensor support included for all units and types
- Added Relief / Return Fan Bypass
- Changed Relief Damper Manual Override command to not be slew rated
- Space Cooling & Space Heating Setpoint difference has been modified from 3 deg F to 2 deg F
- Added new Compressor Run Time point(s) to hours instead of minutes
- Added Midco heater support
- Added Condenser Fan and Air Handler Phase Monitor inputs
- Added comm loss diagnostics for outputs on HEX I/O:
 - OA Damper command
 - Discharge Iso Damper command
 - Return Iso Damper command

- Relief Damper command
 - Mod Head output
- Added Relief Fan TR-150 (VFD) Support
- 2-Stage Compressor support
- Included new TU role files
- Modified existing refrigerant pressures to gauge, and added new absolute pressure points
- Added EC Fan support fan
- Comps now stage up for Rapid Restart after a power cycle
- Added VOM Return Fan In-Control support
- Added diagnostic to trip unit if duct pressure null delta exceeds setting
 - Added configuration item to limit min of duct pressure setpoint for "high" pressure applications that disable zeroing.
 - Added null delta data for space pressure
- Added a Failed to Start diagnostic for when the second or third gas heat burner fails to start
- Enhanced code to use airflow sequencer for all heat types to manage airflow meets min airflow setting before heat is allowed to start
- Added Economizer Dry Bulb Offset setpoint
- Added Return Pressure LLID support
- Added Null measurements for Traq and Supply Pressure Sensors
- Enhancements to coordinating supply and relief/return fan bypass operation.
- Added Economizer With Differential Dry Bulb support
- Added "Heat Fail – Auto" and "Heat Fail – Manual" diagnostics
- Support for external supply fan speed control with Return Plenum Low Limit.
- Return fan now starts on supply fan start, not start + proving. Target Min/Max Setpoint overlap prevention. Full airflow modes drive return fan to minimum, then releases...
- Added return pressure check on supply fan command on w/o proving support
- Added return plenum press low limit for external fan speed control support
- Added a change to update interval for inputs to 900 seconds for configuration items and 1 second for all others
- Added 4th condenser fan support and 4th condenser fan relay status
- Corrected Outdoor airflow pressure sensor and assembly failure diagnostics are generated if Traqs is disabled
- Made Outdoor Enthalpy BAS, Space Static Pressure BAS, and Duct Static Pressure BAS not visible since they are not supported on the point side and causing error messages on TD
- Added support for 1 or 2 supply fans depending on unit type and tonnage

Symbio 800™ Version 2.00. __ Revision G, Release Date – 07/11/22

New Features & Enhancements

- Corrected duplicate instance ID's for Space Dew Point Analog Input points

Symbio 800™ Version 3.00. __ Revision H, Release Date – 01/27/23

New Equipment Configurations Supported

- Energy Recovery Wheel
- External Capacity Control
 - Communicated/BAS
 - Wired Voltage
 - Wired Current
- 20T IPAK 1
- 0-25% Motorized Damper for Outdoor Air Control
- Midco heater
- 100% OA With No Return Air
- IPAK II Unit Performance: Standard, High, Variable Speed, and High Variable Speed

New Features & Enhancements

- Enhanced Optimal Start Limit Control for IPAK II
- Added new manifold for 20S & 20H compressors for IPAK 1
- Minimum Compressor on-time Limit
 - Fixed Speed Compressors are allowed to be turned off during minimum on time limit to eliminate issue with all compressors being in minimum on time during Rapid Restart. Also reduces likelihood of variable speed compressor turning off when manifolded with a fixed speed compressor.
- Changed 60Hz, 300 kW / 50Hz, 188 kW staged electric heat to 8 stages from 4.
- IPAK 2 90T Variable, 105T, 120T, 130T and 150T Rapid Restart Termination Time default setting changed to 240 seconds. All remaining IPAK, IPAK 1 and IPAK 2 units default value remains at 180 seconds.
- Updated pressure null functionality/setpoints for space pressure, return plenum, air flow pressure null calibration diagnostics.
- Added Return Air Damper Control for Title 24 and Energy Recovery Wheel configurations only.

Note: No Revision I by Design

Symbio 800™ Version 3:10.007 Revision J, Release Date – 10/3/2023

New Equipment Configurations Supported

- Regal brand condenser fan
- IPAK 2 Modulating Electric Air Flow

New Features & Enhancements

- IPAK 2 Gas Heat voltage correction from 4.5V to 6.15V

Symbio 800™ Version 4:00.0003 Revision K, Release Date - 6/19/2024

New Equipment Configurations Supported

- R454B Support (A2L)
 - Added compressor data for new compressor selections
 - Refrigerant Leak Detection
 - Added compressor protections based on R454B

New Features & Enhancements

- Refrigeration Evacuation / Charge Operation
- Modbus Address Tool
 - EC Relief Fan 1, 2, 3 – IPAK III only
 - Refrigerant Leak Sensors
 - EC Condenser Fans
- Support all manual overrides to be shown as sub-modes.
- Condenser Phase Monitor diagnostic changed from Latching, Local Reset to Non-Latching, Remote Reset.
- Fixed actuator voltage input logic debounce to handle voltage dip that generates diagnostics.
- Fixed BACnet point Economizer Decision Method when units are configured for Differential Dry Bulb Economizer. Return Air Temp point must be created when configured for Differential Dry Bulb. This also includes point file support of elimination of In Fault Points.
- Added BACnet points:
 - Exhaust Fan 1, 2 ,3 VFD Power
 - Return Fan VFD Power
 - Supply Fan 1, 2 VFD Power
- Gas Heat (IPAK I / II) was locking out after 2 retries vs 3. The timer that limits the number of retries for starting of gas heat has been adjust from 6 minutes to 15 minutes to allow enough time for the third retry.
- Gas Heat (IPAK I / II) - Added a 3-minute timer for Unexpected Shutdown while running during the 24 hour continuous operation reset timer.
- IPAK I added manual control for Stage 2 on units with 2 Stage compressors.
- Loss of Charge Detection diagnostic modified to warning, non-latching. Loss of Charge detection time has been extended from 300 to 1800 seconds.

- Loss of Charge Lockout diagnostic time interval has been extended from 300 to 900 seconds.

Symbio 800™ Version 4:10.000 Revision L, Release Date – 10/12/2024

New Equipment Configurations Supported

- R454B Support for IPAK 3
 - Added compressor data for new compressor selections
 - Refrigerant Leak Detection
 - Added Compressor protections based on R454B

New Features & Enhancements

- IPAK 1 Ultra Modulating Gas Heat initiation starts at 2 volts.
- Condensate Overflow and Condensate Overflow Lockout diagnostic target change to DX System.
- Enhanced Loss of Charge algorithm calculation.
- Loss of Charge Warning diagnostic no longer triggers when in active Reheat or Hot Gas Bypass.