

**August 31, 2022**

The document is accurate as of the date on the title line above.

### Symbio 800 Chiller Software File Selection

| Symbio 800<br>Software Filename                            | Supported Chillers                                                                                                                                                                                                                                                               |
|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">AirCooledRotary-0755-x-xx-xxxx.scfx</a>        | • Ascend™ Air-Cooled Chiller Model <b>ACR</b> (150-300 Nominal Tons)                                                                                                                                                                                                             |
| <a href="#">AirCooledRotary-0759-x-xx-xxxx.scfx</a>        | • Ascend™ Air-Cooled Chiller Model <b>ACR</b> (Above 300 Nominal Tons)                                                                                                                                                                                                           |
| <a href="#">AirCooledRotary-0763-x-xx-xxxx.scfx</a>        | • Sintesis Prime™ Air-Cooled Chiller Model <b>RTAF</b> (90-600 Nominal Tons)                                                                                                                                                                                                     |
| <a href="#">AirCooledScroll-0770-x-xx-xxxx.scfx</a>        | • Sintesis Balance™ Multi Pipe Unit Model <b>CMAF</b> (80-200 Nominal Tons)                                                                                                                                                                                                      |
| <a href="#">WaterCooledRotary-0773-x-xx-xxxx.scfx</a>      | • XStream™ Water-Cooled Chiller Model <b>RTWF</b> (95-515 Nominal Tons)<br>• City™ Water-Cooled Chiller Model <b>RTSF</b> (50-110 Nominal Tons)<br>• Water-Cooled Chiller Model <b>RTWD</b> and <b>RTUD</b> (60-270 Nominal Tons)                                                |
| <a href="#">WaterCooledScroll-0784-x-xx-xxxx.scfx</a>      | • Flex <sup>2</sup> O™ Water Cooled Unit Model <b>CGWF (Cooling only)</b> , <b>CXWF (Heat pump)</b> , <b>CCUF(Condenser Less)</b> (15-200 Nominal Tons)                                                                                                                          |
| <a href="#">AirCooledCentrifugal-0793-x-xx-xxxx.scfx</a>   | • Sintesis Excellent™ High speed magnetic bearing centrifugal Air cooled chiller. Model <b>GVAF</b> (140-460 Nominal Tons)                                                                                                                                                       |
| <a href="#">WaterCooledCentrifugal-0728-x-xx-xxxx.scfx</a> | • CenTraVac™ Simplex (100-2000 Nominal Tons)                                                                                                                                                                                                                                     |
| <a href="#">WaterCooledCentrifugal-0729-x-xx-xxxx.scfx</a> | • CenTraVac™ Duplex (1200-4000 Nominal Tons)                                                                                                                                                                                                                                     |
| <a href="#">WaterCooledCentrifugal-0771-x-xx-xxxx.scfx</a> | • Agility™ Water-Cooled Chiller Model <b>HDWA</b> (200-400 Nominal Tons)                                                                                                                                                                                                         |
| <a href="#">AirCooledScroll-0762-x-xx-xxxx.scfx</a>        | • Ascend™ Air-cooled Chiller Model <b>ACS</b> and <b>ACX</b> (140-230 Nominal Tons)<br>• Sintesis Advantage™ Air-cooled Chiller Model <b>CGAF</b> and <b>CXAF</b> (50-190 Nominal Tons)<br>• Conquest™ Air Cooled Chiller Model <b>CGAX</b> and <b>CXAX</b> (12-50 Nominal Tons) |
| <a href="#">WaterCooledCentrifugal-0796-x-xx-xxxx.scfx</a> | • XStream™ eXcellent High speed magnetic bearing centrifugal Water-cooled chiller. Model <b>GVWF</b> (135-760 Nominal Tons)                                                                                                                                                      |
| <a href="#">WaterCooledRotary-0797-x-xx-xxxx.scfx</a>      | • Optimus™ Water-Cooled Chillers Model <b>RTHD</b> (150-430 Nominal Tons)                                                                                                                                                                                                        |
| <a href="#">AirCooledRotary-0822-x-xx-xxxx.scfx</a>        | • Air-Cooled Chiller Model <b>RTAG</b> (85-500 Nominal Tons)                                                                                                                                                                                                                     |

### Symbio 800 Chiller Software High Level Revision/Change Summary

The **E**, **A**, **P**, **L** indicators in the Software Part Number column indicate the versions of software that are shipping from Charmes (EMEA), Taicang (Asia Pacific), Pueblo, and La Crosse.

| Chiller Type      | Software Part Number             | Software Build | Date                      | Summary Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------|----------------------------------|----------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Air-cooled Rotary | AirCooledRotary-0755<br><b>P</b> | 1-00-0007      | Jul 14 <sup>th</sup> 2020 | <b>Initial Release</b> <ul style="list-style-type: none"> <li>• 150-300T Range</li> <li>• Compressors: GP4 VVi with R134a refrigerant</li> <li>• Ambient: STD, Low, Extreme Low, High, Wide</li> <li>• Symbio 800 Controller platform</li> <li>• AFD: Rockwell 755(1/ckt)</li> <li>• Total Direct Free Cooling</li> <li>• Fan: EC fan type</li> <li>• Noise Reduction Request</li> <li>• Ice Making; Low Temp Process</li> <li>• Comm Interface: BACnet (MS/TP and IP), ModBus, LonTalk</li> <li>• Hard Wire Communication: External setpoints, programmable relays</li> </ul>                                                                                                                                                                                                                                                                                                                                              |
|                   |                                  | 1-10-0004      | Mar 23 <sup>rd</sup> 2021 | <b>Release 2</b> <ul style="list-style-type: none"> <li>• Support Evaporator Pump Package with Single Pump Variable Speed option with Direct Pump Speed Controls or Water Flow Control.</li> <li>• Support Flow Measurement.</li> <li>• Direct Free Cooling enhancement for improved efficiency.</li> <li>• Other Miscellaneous improvements: <ul style="list-style-type: none"> <li>▪ Stop data recorder after operational pumpdown has completed (Integrity 298455).</li> <li>▪ Added optional Authorization Security feature to the display.</li> <li>▪ Added support for the Time Zone setting to the display.</li> <li>▪ Updated product text string to 'ACRB' or 'ACRB 150-300T' from ACRB_Small.</li> <li>▪ Included BACNet notification of alarm event to the Diagnostic points. These are the 8 high level diagnostic points (i.e. Diagnostic Present, Diagnostic Shutdown Present, etc...)</li> </ul> </li> </ul> |

| Chiller Type        | Software Part Number        | Software Build | Date                      | Summary Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------|-----------------------------|----------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     |                             |                |                           | <ul style="list-style-type: none"> <li>External Circuit Lockout to follow setpoint arbitration source. Setting Setpoint Source to Ext/FP or BAS/Ext/FP is required now for the External Circuit Lockout to be arbitrated and work.</li> <li>Remove non-applicable UNICO BAS BACNet points from Rockwell PF755 data list. User will no longer see these points and its point fault status.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                     |                             | 1-10-0010      | July 2 <sup>nd</sup> 2021 | <b>Release 3</b> <ul style="list-style-type: none"> <li>Addressed potential controller reset in the Symbio 800 platform.</li> <li>Addressed security issues in the Symbio 800 platform.</li> <li>Added BAS points for Oil Level Sensors and Compressor Discharge Superheat.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                     |                             |                |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Water-cooled Rotary | WaterCooledRotary-0773<br>E | 1-00-0004      | Aug 5 <sup>th</sup> 2020  | Initial Release. <ul style="list-style-type: none"> <li>Ported UC800 RTWF/RTSF production release 4.00 to Symbio800</li> <li>Added RTWF XSE R134a range (sizes 115 to 375 with GP4Vvi R &amp; S compressors)</li> <li>Added GP2 LoVi R1234ze compressors to RTWF 3/4 compressors</li> <li>Improved RTWF and RTSF control (heat pump application, GP2 control, ...)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                     |                             | 1-10-0001      | Dec 9 <sup>th</sup> 2021  | <ul style="list-style-type: none"> <li>Integration of RTWD and RTUD control from CH530, sharing options from other water-cooled models               <ul style="list-style-type: none"> <li>Individuation for EXV control based on evaporator liquid level and pressure control</li> <li>Individuation for Evaporator Oil Return Control (gas pump for R134a)</li> <li>Individuation for Off-Cycle Evaporator freeze protection</li> <li>Air-cooled features for RTUD (condenser fan control, noise reduction request, operational pumpdown)</li> <li>Starter module with embedded power meter feature for retrofit compability</li> </ul> </li> <li>RTWF platform quality improvements               <ul style="list-style-type: none"> <li>Evaporator and Condenser Water Pump Control (freeze avoidance)</li> <li>EXV management at circuit stop (freeze avoidance and refrigerant migration reduction)</li> </ul> </li> </ul> |

| Chiller Type      | Software Part Number      | Software Build | Date                      | Summary Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------|---------------------------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |                           |                |                           | <ul style="list-style-type: none"> <li>- High compressor discharge refrigerant temperature and oil temperature protection</li> <li>• New refrigerant R515B for models compatible with R1234ze</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Air-cooled Scroll | AirCooledScroll-0770<br>E | 1-00-0004      | Sep 29 <sup>th</sup> 2020 | Initial Release. 4 pipe air cooled scroll unit with dual circuits, 4 to 6 compressors, Pump package, auxiliary heater control                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                   |                           | 1-10-0005      | Jan 15 <sup>th</sup> 2021 | Improve performance/reliability of unit: <ul style="list-style-type: none"> <li>• Step motor mode valve position in mode transition (main modes are: Cooling Air Cooled, Heating Heat Pump and Heat Recovery)</li> <li>• Dynamic receiver valve management</li> <li>• Implement Loss of charge detection logic with measured subcooling</li> </ul> New features: <ul style="list-style-type: none"> <li>• Dynamic receiver overheating avoidance.</li> </ul> R454B refrigerant                                                                                                                                                                                                                                                                                                                                                                 |
|                   |                           | 1-20-0004      | May 11 <sup>th</sup> 2022 | Release 3: <ul style="list-style-type: none"> <li>• Control improvements (see engineering specification for details):               <ul style="list-style-type: none"> <li>○ R454B refrigerant</li> <li>○ Defrost cycle</li> <li>○ Purge cycle</li> <li>○ Liquid receiver management</li> <li>○ Low refrigerant temperature management</li> <li>○ Fans management</li> </ul> </li> <li>• New features:               <ul style="list-style-type: none"> <li>○ Switch to Symbio 800 Platform V4 with TD7 HMI alignment</li> <li>○ Added Excessive Liquid line Pressure diagnostic with action on circuit valves</li> <li>○ Added a compensation for refrigerant bypass to EXV superheat control logic when liquid receiver is draining</li> <li>○ Added a filtering feature to smooth active subcooling setpoint changes</li> </ul> </li> </ul> |

| Chiller Type      | Software Part Number      | Software Build | Date                      | Summary Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------|---------------------------|----------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |                           |                |                           | <ul style="list-style-type: none"> <li>○ Created a non latching diagnostic if heat recovery water temperature is colder than saturated suction temperature in cooling air cooled mode</li> <li>○ Added manual coil purge override function in Tracer TU manual override menu</li> <li>○ Added Bari manufacturing location 1V, 2V and 3V units</li> <li>○ Added DSH161 compressor selection</li> <li>○ Added Dual Pump, Dual Drive, Alternating scheme on evaporator pump control</li> <li>○ Added Chilled Water Pump Request BAS and Hot Water Pump Request BAS points</li> </ul>                                                                                                                                                                      |
| Air-cooled Rotary | AirCooledRotary-0759<br>P | 1-00-0010      | Dec 18 <sup>th</sup> 2020 | <p>Initial Release.</p> <ul style="list-style-type: none"> <li>• Support 380 and 450T only. The remaining tonnages will be in the next release.</li> <li>• Compressors: GP2.5 and GP4 VVi with R134a refrigerant</li> <li>• Ambient: STD, Low, Extreme Low, High, Wide</li> <li>• Symbio 800 Controller platform</li> <li>• AFD: Rockwell 755(on 1A and 2A)</li> <li>• Fan: EC fan type</li> <li>• Noise Reduction Request</li> <li>• Ice Making; Low Temp Process</li> <li>• Rapid Restart</li> <li>• Energy Meter</li> <li>• Comm Interface: BACnet (MS/TP and IP), ModBus, LonTalk</li> <li>• Hard Wire Communication: External setpoints, programmable relays</li> <li>• Total Direct Free Cooling (NOT included in until next release)</li> </ul> |
|                   |                           | 1-10-0009      | Jun 28 <sup>th</sup> 2021 | <p>Release 2:</p> <ul style="list-style-type: none"> <li>• Added support for 375T, 440T 500T, 550T (in addition to 380 and 450 Tons).</li> <li>• Introduced Direct Free Cooling and the Enhancement to improve efficiency.</li> <li>• Introduced Wireless Options (Air-Fi, Wi-Fi, LTE Modem).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Chiller Type | Software Part Number | Software Build | Date                      | Summary Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------|----------------------|----------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |                      |                |                           | <ul style="list-style-type: none"> <li>Updated compressor Low Discharge Superheat Protection to the approved method of using the Discharge Superheat at 9F trip point (was using Oil Superheat at 6F trip point).</li> <li>Updated GP4 Oil Return Valve control to avoid suppressing discharge superheat and still maintain adequate drive cooling.</li> <li>Added Oil Superheat to TD7 and TU</li> <li>Added Authorization to the Date and Time screen, previously allowed for all users.</li> <li>Added support for the Time Zone setting to the display.</li> <li>Added the following BAS points: <ul style="list-style-type: none"> <li>Oil Sensor Circuit X</li> <li>Discharge Superheat Compressor XY</li> <li>Evaporator Approach Temperature Circuit X</li> <li>Circuit X Cooling Available</li> </ul> </li> <li>Implemented alarm notification for the following diagnostic points <ul style="list-style-type: none"> <li>Diagnostic Present</li> <li>Diagnostic Shutdown Present</li> <li>Diagnostic: Manual Reset Required</li> <li>Diagnostic: Local Manual Reset Required</li> <li>Diagnostic Present: Information</li> <li>Diagnostic Present: Advisory</li> <li>Diagnostic Present: Critical</li> <li>Diagnostic Present: Service Required</li> </ul> </li> <li>Addressed potential controller reset in the Symbio 800 platform.</li> <li>Addressed security issues in the Symbio 800 platform.</li> </ul> |
|              |                      | 1-10-0010      | Aug 11 <sup>th</sup> 2021 | Addressed fan speed calculation error in part-load (PLEO). This error was insignificant on 380T and 450T unit; therefore, field upgrade on shipped 380T/450T is optional.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|              |                      | 1-10-0014      | May 17 <sup>th</sup> 2022 | Addressed Visible Data Log defect that can result in gaps in the data                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|              |                      |                |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|              |                      | 1-00-0001      | Jan 5 <sup>th</sup> 2021  | Initial Release.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Chiller Type        | Software Part Number                               | Software Build | Date                       | Summary Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------|----------------------------------------------------|----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Water-cooled Scroll | <a href="#">WaterCooledScroll-0784</a><br><b>E</b> |                |                            | <ul style="list-style-type: none"> <li>• 1 to 3 Compressors: DSH 090 to DSH485 per circuit</li> <li>• Single or dual pump, fixed and variable speed, on Evaporator and Condenser</li> <li>• Head pressure control, Variable Primary Flow on both evaporator and condenser.</li> <li>• R410A refrigerant</li> </ul>                                                                                                                                                                                                                                                                                                                                                                           |
|                     |                                                    | 1.10.0001      | Jan 31 <sup>st</sup> 2022  | Release2 <ul style="list-style-type: none"> <li>• Built with Platform V3 (cyber security fix vs initial version).</li> <li>• R454B Refrigerant</li> <li>• BAS point for pressure data are available in gauge and absolute kPa / PSI.</li> <li>• Add DSH120 and DSH161 compressors</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                 |
|                     |                                                    |                |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Air-cooled Rotary   | <a href="#">AirCooledRotary-0763</a><br><b>E</b>   | 1-00-0007      | Mar 31 <sup>st</sup> 2021  | Initial Release <ul style="list-style-type: none"> <li>• Migration to Symbio800 from UC800 RTAF 6200-0619 v5.02</li> <li>• GP4 R134A enhancement (Oil Supply Temp and associated protections)</li> <li>• New features 'Rapid Restart' and 'UPS Control'</li> <li>• New features for higher flexibility and serviceability of Total Heat Recovery</li> <li>• Fix or improve misc v5.02 features, include but not only               <ul style="list-style-type: none"> <li>○ Free Cooling Glycol Pressure protection</li> <li>○ Total Heat Recovery: sequence to switch to air-cooled mode</li> <li>○ Pool Temperature Sensor installed or not and associated features</li> </ul> </li> </ul> |
|                     |                                                    | 1-10-0002      | July 13 <sup>th</sup> 2021 | Release 2 <ul style="list-style-type: none"> <li>• Addressed potential controller reset in the Symbio 800 platform.</li> <li>• Addressed security issues in the Symbio 800 platform.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                     |                                                    | 1-10-0003      | July 26 <sup>th</sup> 2022 | <ul style="list-style-type: none"> <li>• Move to V4 platform in order to fix issues with Visible Data Logs</li> <li>• Resolved newly generated compilation warnings enunciated by platform V4.</li> <li>• Defect 317706: (related) Updated to support the new contracts for permissions and user roles, to be able to work with the permissions of an updated V4 controller build.</li> </ul>                                                                                                                                                                                                                                                                                                |

| Chiller Type           | Software Part Number           | Software Build | Date                        | Summary Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------|--------------------------------|----------------|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        |                                |                |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Air-cooled Centrifugal | AirCooledCentrifugal-0793<br>E | 1-00-0008      | Jun 21 <sup>st</sup> 2021   | Initial Release <ul style="list-style-type: none"> <li>○ Migration to Symbio800 from GVAF UC800 6200-0675 v1.28</li> <li>○ Support of new compressor frames TGS230, TTS300, TGS490, TGS375 (will become TGS380), TGH285, TTH375</li> <li>○ New function for Data center application :               <ul style="list-style-type: none"> <li>○ Extension of evaporator water temperature up to 37°C Entering water</li> <li>○ Add new motor cooling logic with High suction temperature compressor version and/or liquid refrigerant pump.</li> <li>○ New features 'Rapid Restart' and 'UPS Control'</li> <li>○ New EXV condenser pressure limit logic for high evaporator load starting conditions.</li> <li>○ Revised reference for current limit setpoint</li> <li>○ Add BAS compressor lockout BV</li> </ul> </li> <li>○ Other updates               <ul style="list-style-type: none"> <li>○ Single circuit unit support</li> <li>○ Option without economizer</li> <li>○ Configuration from 4 to 24 fans per circuit</li> <li>○ Optimize sequence of economizer and Load balancing valve.</li> <li>○ Airflow preposition at start rework</li> <li>○ Add dual pump running time balancing logic.</li> <li>○ Fix Error 1002 and controller reboot when compressor shutdown due to BMCC fault</li> </ul> </li> </ul> |
|                        |                                | 1-10-0002      | March 15 <sup>th</sup> 2022 | <ul style="list-style-type: none"> <li>○ Platform Version: 4</li> <li>○ Implementation of diagnostic BI points</li> <li>○ Add BAS water pump run and Speed command</li> <li>○ Add "Bearing/Motor Controller Fault Lockout - xy", to lockout the diagnostic after 4th occurrences in a period of 3h</li> <li>○ Remove pressure equalization at circuit start if Air Temp is bellow Evap Entering Water Temp.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Chiller Type             | Software Part Number                | Software Build | Date                      | Summary Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------|-------------------------------------|----------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                     |                |                           | <ul style="list-style-type: none"> <li>○ Implement New PLEO model with extended map on Air and Water side.</li> <li>○ Implement Thresher coil (Parallel coil) as a new method in motor cooling logic.</li> <li>○ Add BAS Free cooling control points (status, lockout, override)</li> <li>○ Add new function for High pressure ratio limit</li> <li>○ Add new function for Low Suction Temperature limit and protection (High SST compressors)</li> <li>○ Remove motor cooling Airflow compensation when in Load balancing valve control.</li> <li>○ Revise fuzzy load calculation with current model in compressor staging logic.</li> <li>○ Immediate shutdown shall wait compressor to stop before closing EXV and stopping airflow.</li> <li>○ Disable economizer if temperature delta did not allow liquid subcooling gain through economizer.</li> <li>○ Add TGS 380 and TGS380H compressors.</li> <li>○ Increase upper limit for chilled water setpoint to 30°C.</li> <li>○ Duplicate BAS pressure points in gauge and absolute pressure.</li> </ul> |
| Water-Cooled Centrifugal | WaterCooledCentrifugal-0728<br>A, L | 1-00-0003      | Sept 7 <sup>th</sup> 2021 | Initial Release <ul style="list-style-type: none"> <li>○ Platform Version: 3</li> <li>○ Migration to Symbio 800 from UC800 CTV Simplex 6200-0456 v15.03</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                          |                                     | 1-10-0003      | May 24 <sup>th</sup> 2022 | Release 2 <ul style="list-style-type: none"> <li>○ Platform Version : 4               <ul style="list-style-type: none"> <li>○ Includes Tracer Event Log and BAS Individual Diagnostics</li> </ul> </li> <li>○ Added starter type: Rockwell PF6000 MV AFD (this AFD is a Modbus Communicating AFD)</li> <li>○ Numerous defect changes including:               <ul style="list-style-type: none"> <li>○ Updated BAS Point: Actual Running Capacity</li> <li>○ Updated diagnostic persistence of AFD Power Loss and AFD Over Voltage</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Chiller Type             | Software Part Number                       | Software Build | Date            | Summary Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------|--------------------------------------------|----------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                            |                |                 | <ul style="list-style-type: none"> <li>○ Updated reset level of Starter Fault diagnostic</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Water-Cooled Centrifugal | WaterCooledCentrifugal-0729<br><b>A, L</b> | 1-00-0005      | Sept 8th 2021   | Initial Release <ul style="list-style-type: none"> <li>○ Platform Version: 3</li> <li>○ Migration to Symbio 800 from UC800 CTV <b>Duplex</b> 6200-0481 v10.00</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                          |                                            | 1-10-0006      | August 31, 2022 | <ul style="list-style-type: none"> <li>● Controller               <ul style="list-style-type: none"> <li>○ Upgraded to Platform Version 4                   <ul style="list-style-type: none"> <li>▪ Includes Tracer TU Event Log and BAS Individual Diagnostics.</li> </ul> </li> <li>○ Added starter type: Remote Mount Comm AFD (VFBD), which is the Rockwell PF6000 MV AFD (Modbus Communicating AFD).</li> <li>○ Added Freeze Protection feature (Evaporator Refrigerant Pressure Transducers).</li> <li>○ Added CTV Conversion feature/upgrade to support Aftermarket team                   <ul style="list-style-type: none"> <li>▪ CH530 to Symbio 800 upgrade</li> <li>▪ UC800 to Symbio 800 upgrade</li> </ul> </li> <li>○ Update to the persistence of the AFD Over Voltage diagnostic to Non-Latching.</li> <li>○ Numerous defect changes including:                   <ul style="list-style-type: none"> <li>▪ Updated operating mode from “Panic Stop” to “Immediate Stop”.</li> <li>▪ Fixed Immediate Shutdown Functionality.</li> <li>▪ Changed BAS points to be made visible in any configuration: Unit Power Consumption, Energy Consumption, and Energy Consumption Lifetime.</li> <li>▪ Updated name of Average Line Current Circuit 1/2 from Starters/Drives to "Starter Average Line Current Circuit X".</li> <li>▪ Updated the persistence of the AFD Power Loss diagnostic to Non-Latching.</li> </ul> </li> </ul> </li> </ul> |

| Chiller Type             | Software Part Number                 | Software Build | Date                        | Summary Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------|--------------------------------------|----------------|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                      |                |                             | <ul style="list-style-type: none"> <li>▪ Re-ordered Energy Meter data on Unit Status tab of Tracer TU to match CTV Simplex, HDWA. Unit status now has Energy Meter 1 and Energy Meter 2 sections.</li> <li>▪ CDHF 3650 ton with Oil Cooler installed now includes the oil management related setpoints.</li> </ul> <ul style="list-style-type: none"> <li>• TD12: <ul style="list-style-type: none"> <li>○ Added 'AFD Average Input Voltage CktX' and 'AFD Calculated Input Voltage CktX' variables in multiple screens.</li> <li>○ Added support for Unit Manufacture Date on About screen.</li> <li>○ Added support for new Wi-Fi Access Point Authentication feature on Settings page.</li> <li>○ Multiple enhancements made to Data Graphs feature of the display including Tooltip.</li> <li>○ Numerous defects changes including: <ul style="list-style-type: none"> <li>▪ Improved warning message on the LLID Binding warning popup.</li> </ul> </li> </ul> </li> </ul> |
| Water-Cooled Centrifugal | WaterCooledCentrifugal-0771<br><br>L | 1-00-0010      | Aug 23 <sup>rd</sup> 2021   | Initial Release <ul style="list-style-type: none"> <li>○ Platform Version: 3</li> <li>○ Migration to Symbio 800 from UC800 HDWA 6200-0697 v2.01</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                          |                                      | 1-10-0001      | Feb 18 <sup>th</sup> , 2022 | Release 2 <ul style="list-style-type: none"> <li>• Platform Version: 3</li> <li>• Symbio 800 Changes:</li> <li>• Added ability to prove flow using Water Measurement options <ul style="list-style-type: none"> <li>○ Added Configuration Question in Tracer TU "Motor LC Filter" for new motor (LC Filter removal between AFD and Motor)</li> <li>○ Added Head Pressure Control feature</li> <li>○ Maximum head pressure control setpoint to 200 psid</li> <li>○ Updated BAS "Net Present Power Demand"(NetPresentPowerDemand) to "Unit Power Demand"(UnitPowerDemand)</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                  |

| Chiller Type      | Software Part Number         | Software Build | Date                       | Summary Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------|------------------------------|----------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |                              |                |                            | <ul style="list-style-type: none"> <li>○ Added Meter Average Line Voltage and Meter Average Line Current Points</li> <li>○ Added Drive Cooling Temperature Target to Unit Status tab of Tracer TU</li> <li>○ Added submode "Waiting For AFD To Start"</li> <li>○ Added submode "Cycled Off Due To Surge Avoidance"</li> <li>○ Updated the "Motor Rotor Elongation Setpoint Microns" setpoint's max value from 250 to 350</li> <li>○ Updated the "High Motor Winding Cutout" setpoints max value from 265 to 293 deg F</li> <li>○ Improved Energy Consumption calculations when the Energy Meter is installed</li> </ul> |
|                   |                              | 1-10-0002      | Sept 20 <sup>th</sup> 2022 | Release 3 <ul style="list-style-type: none"> <li>● Platform Version: 4</li> <li>● Symbio 800 Changes:               <ul style="list-style-type: none"> <li>○ Upgraded to Symbio 800 V4 platform (to help with intermittent Modbus communication data loss)</li> <li>○ Enhanced the diagnostic: Loss of Drive Cooling Control (field reported defect change)</li> </ul> </li> </ul>                                                                                                                                                                                                                                      |
|                   |                              |                |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Air-cooled Scroll | AirCooledScroll-0762<br>E, P | 1-00-0004      | Oct 14 <sup>th</sup> 2021  | Initial Release <ul style="list-style-type: none"> <li>○ Migration to Symbio 800 from UC800 CGAF, CXAF, ACSA 6200-0694-4.08</li> <li>○ Added Unit Model "ACXA" to support Pueblo reversible heat pump units</li> <li>○ Support Refrigerant Type R410A and R454B</li> <li>○ Improved Suction Superheat Control</li> <li>○ Added Low Ambient Heating Superheat Reset to expand low ambient heating operating range</li> <li>○ Improved Defrost and Warm-up Cycle Control</li> <li>○ Added Dual EXV (separate Cooling EXV and Heating EXV) for ACXA</li> </ul>                                                             |

| Chiller Type | Software Part Number | Software Build | Date                         | Summary Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------|----------------------|----------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |                      |                |                              | <ul style="list-style-type: none"> <li>○ Updated Service Pumpdown Control for Dual EXV</li> <li>○ Added particular Compressor Staging Patterns for oil equalization in heating mode on ACXA 200T and 215T</li> <li>○ Added Water Flow Loss Ignore while entering defrost to avoid nuisance trips with the thermal dispersion type flow sensing</li> <li>○ Support different default values of setpoints according to configuration settings</li> <li>○ Extended Hot Water Setpoint maximum value up to 70°C (158°F)</li> <li>○ Added Schneider Modbus Communicating Energy Meter option</li> <li>○ Comm Interface: BACnet (MS/TP and IP), ModBus, LonTalk</li> <li>○ Introduced Wireless Options (Air-Fi, Wi-Fi, LTE Modem)</li> </ul>                                                  |
|              |                      | 1-10-0003      | Jan 7 <sup>th</sup> 2022     | <b>Release 2</b> <ul style="list-style-type: none"> <li>○ Support for Pueblo ACS Partial Heat Recovery Chiller Project</li> <li>○ Support for EMEA CGAF/CXAF (Bari) Chiller Project</li> <li>○ Added Partial Heat Recovery option for ACSA</li> <li>○ Implemented ACSA PHR condenser fan control and water loop three way valve controls</li> <li>○ Added new Manufacturing Location “Bari”</li> <li>○ Added Dual EXV (separate Cooling EXV and Heating EXV) option for CXAF</li> <li>○ Adding Condenser Fan Control Type option “All Variable Speed AC” for Bari</li> <li>○ Added Fan Fault Input option for Bari</li> <li>○ Added new Compressor Staging Pattern option for Bari</li> <li>○ Added new Compressor Size options for Bari</li> </ul> Other improvements and defect fixes |
|              |                      | 1-10-0007      | July 14 <sup>th</sup> , 2022 | <ul style="list-style-type: none"> <li>○ Move Symbio 800 to V4 platform in order to fix issues with Visible Data Logs</li> <li>○ Defect: 317787 Allow lower minimum chilled water setpoint(CWS) for ACSA; limit ACXA to min CWS of 20F.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Chiller Type             | Software Part Number                     | Software Build | Date                           | Summary Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------|------------------------------------------|----------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                          | 1-20-003       | August 16 <sup>th</sup> , 2022 | <p>Creation of CGAX/CXAX product (Conquest range) within Charmes Manufacturing</p> <ul style="list-style-type: none"> <li>○ Add Single circuit configuration, new EXV, fan deck and compressors</li> <li>○ Add low voltage binary input for paddle flow switch.</li> </ul> <p>Other modifications</p> <ul style="list-style-type: none"> <li>○ Add BAS Water Pump Speed and Run commands, and pump status</li> <li>○ Remove intermediate step F(7) on 3V units, full and dual speed fan decks</li> <li>○ Other improvements and defect fixes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Water-cooled Centrifugal | WaterCooledCentrifugal-0796<br><b>E</b>  | 1-00-0004      | Nov 10 <sup>th</sup> 2021      | <p>Initial Release</p> <ul style="list-style-type: none"> <li>○ Migration to Symbio800 from GVAF Symbio800 1-00-0008</li> <li>○ Support of new compressor frames TGS490, TGS380 (preliminary)</li> <li>○ Differentiated standard and high saturated suction temperature type compressors</li> <li>○ New function for Data center application : <ul style="list-style-type: none"> <li>○ Evaporator entering water temperature up to 37°C</li> <li>○ New features 'Rapid Restart' and 'UPS Control'</li> <li>○ Revised reference for current limit setpoint</li> <li>○ Add BAS compressor lockout BV</li> </ul> </li> <li>○ Other updates compared to UC800 software <ul style="list-style-type: none"> <li>○ Improved first compressor start-up</li> <li>○ Improved EXV control</li> <li>○ Added R515B refrigerant</li> <li>○ Single circuit unit support (preliminary)</li> <li>○ Optimized sequence of economizer and Load balancing valve</li> <li>○ Low saturated suction temperature protection for high saturated suction temperature type compressors</li> <li>○ Fixed Error 1002 and controller reboot when compressor shutdown due to BMCC fault</li> </ul> </li> </ul> |
|                          |                                          |                |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Water-cooled Rotary      | WaterCooledRotary-0797<br><b>P, E, A</b> | 1-00-0005      | May 2 <sup>nd</sup> 2022       | <p>Initial Release</p> <ul style="list-style-type: none"> <li>○ Migration to Symbio 800 from UC800 RTHD</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Chiller Type      | Software Part Number      | Software Build | Date                     | Summary Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------|---------------------------|----------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |                           |                |                          | <ul style="list-style-type: none"> <li>○ V4 Platform</li> <li>○ Support for R515B refrigerant</li> <li>○ Added new Compressor Frame Size DE and EE and new top-level question E3 Compressor Maximum Frequency.</li> <li>○ Added new Config question and MP config item Motor Winding Temperature.</li> <li>○ Completed config setting for Liquid Level Sensor, added a new 90mm top mount sensor type and LLID.</li> <li>○ Updates and improvements to variables</li> </ul> |
| Air-cooled Rotary | AirCooledRotary-0822<br>A | 1-00-0007      | Aug 4 <sup>th</sup> 2022 | Initial Release <ul style="list-style-type: none"> <li>○ Migration to Symbio 800 from UC800 RTAG(4.03)</li> <li>○ V4 Platform</li> <li>○ Support GP4 compressor for Extra Seasonal Efficiency option (205, 275 and 340 tons)</li> <li>○ Added Thermosiphon Oil Return for GP4 compressor</li> <li>○ Updates and improvements for Rapid Restart</li> <li>○ Added new Manufacturing Location of Bangkok</li> </ul>                                                            |