



## Object Naming Conventions

The communicated points for the Symbio™ controllers are generally named according to their function. While many of the points are read-only, others include both read and write capability. The established naming convention helps to identify the capabilities of each point. For most points, the suffix identifies the capability according to the following definition. While there are some exceptions, the majority of the points have been defined according to these guidelines.

| Suffix     | Description  |
|------------|--|
| Status     | Points with the Status suffix are defined as read-only. The status point reports the value being used by the controller.   |
| Local      | Points with the Local suffix are defined as read-only. The local point reports values associated with controller sensors, both wired and wireless. The local value may or may not be actively used by the controller, depending on the presence or absence of a communicated value (BAS). When both a local and communicated value exist, the communicated value is used.  |
| Active     | Points with the Active suffix are defined as read-only. Points designated as active are normally the result of the arbitration between a communicated value(BAS) and at least one value local to the equipment, such as a sensor or default setpoint. The active point reports the value being input to the controller.  |
| Setpoint   | Points with the Setpoint suffix are defined as either read-only or read/write. For BACnet®, the binary input, analog input and multi-state input points are all read-only. These setpoints report the value currently in use by the controller. The analog value, binary value and multi-state value points are all read/write. These points are provided for use by the building automation system (BAS). When used, these points are written internally to arbitration logic. This defines the interaction with hardwired points, editable software configuration points and the relinquish default value/state. Refer to the Appendix for additional information. |
| Input      | Points with the Input suffix are defined as read-only. These points normally reflect the status of a sensor input, either hardwired or communicating wirelessly (Air-Fi®). However, the input point reflects the arbitrated result of the controller sensor input and a communicated value, if present. When both a controller sensor and communicated value exist, the controller will use and report the communicated value.   |
| Arbitrator | Points with the "Arbitrator" suffix are to be used as read-only. The arbitrator prioritizes inputs from communicating points, hardwired points and stored defaults points. The priority array of the arbitration point displays each of the values provided, including the active status, indicating which of the input sources is being used. Refer to the Appendix for additional information.   |
| BAS        | Points with the BAS suffix are defined as read/write. These points are provided for use by the building automation system (BAS). When used, these points are written to arbitration logic. This defines the interaction with hardwired points, editable software configuration points and the relinquished default value/state. Refer to the Appendix for additional information.  |
| Command    | Points with the Command suffix are defined as read/write. These points are written to change the default behavior of the controller. Once written, these point values may be persisted.  |
| Request    | Points with the Request suffix are defined as read/write. These points are written to request a change the operating behavior of the controller.   |



## Object Data Points and Diagnostic Data Points

The following tables are sorted as follows:

- Tables are listed by input/output type and sorted by object identifier. These tables provide the user with the unit's type for each object
- Tables are sorted by object name and provide a complete list of object names, types, values/ranges, and descriptions.

*Note: Not all points are available to the user. The available data points are defined during self-configuration and are dependent on the type of equipment.*

# Symbio™ 800 Integration Points List

BACnet®

RTAC (CH530)

Date: 12/6/2024

Reference Document: BAS-SVP083\*-EN



| Object Identifier | Object Name   | Description   | Units       | Configuration Dependency |
|-------------------|---|---|-------------|--------------------------|
| 1                 | Active Cool/Heat Setpoint Temperature               | Active chiller water or hot water setpoint.                 | Temperature |                          |
| 2                 | Active Current Limit Setpoint                       | Active capacity current limit setpoint.                     | Percent     |                          |
| 5                 | Actual Running Capacity                             | Level of capacity that the chiller is currently running at. | Percent     |                          |
| 6                 | Evaporator Refrigerant Pressure- Ckt1               | Circuit 1 evaporator refrigerant pressure.                  | Pressure    |                          |
| 9                 | Evaporator Refrigerant Pressure- Ckt 2              | Circuit 2 evaporator refrigerant pressure.                  | Pressure    |                          |
| 12                | Evaporator Saturated Refrigerant Temperature- Ckt 1 | Circuit 2 evaporator refrigerant temperature.               | Temperature |                          |
| 14                | Evaporator Saturated Refrigerant Temperature- Ckt 2 | Circuit 2 evaporator refrigerant temperature.               | Temperature |                          |
| 16                | Condenser Refrigerant Pressure- Ckt 1               | Circuit 1 condenser refrigerant pressure.                   | Pressure    |                          |
| 18                | Condenser Refrigerant Pressure- Ckt 2               | Circuit 2 condenser refrigerant pressure.                   | Pressure    |                          |
| 20                | Condenser Saturated Refrigerant Temperature- Ckt 1  | Circuit 1 condenser refrigerant temperature.                | Temperature |                          |
| 22                | Condenser Saturated Refrigerant Temperature- Ckt 2  | Circuit 2 condenser refrigerant temperature.                | Temperature |                          |
| 25                | Local Atmospheric Pressure                          | Local atmospheric pressure.                                 | Pressure    |                          |
| 26                | Starts- Compressor 1A                               | Number of starts for compressor 1A.                         |             |                          |
| 27                | Starts- Compressor 1B                               | Number of starts for compressor 1B.                         |             |                          |
| 28                | Starts- Compressor 2A                               | Number of starts for compressor 2A.                         |             |                          |
| 29                | Starts- Compressor 2B                               | Number of starts for compressor 2B.                         |             |                          |
| 34                | Run Time- Compressor 1A                             | Total run time of compressor 1A.                            | Time        |                          |
| 35                | Run Time- Compressor 1B                             | Total run time of compressor 1B.                            | Time        |                          |
| 36                | Run Time- Compressor 2A                             | Total run time of compressor 2A.                            | Time        |                          |
| 42                | Airflow Percentage- Circuit 1                       | Approximate airflow percentage of circuit 1.                | Percent     |                          |
| 43                | Airflow Percentage- Circuit 2                       | Approximate airflow percentage of circuit 2.                | Percent     |                          |
| 44                | Evaporator Entering Water Temp                      | Temperature of the water entering the evaporator.           | Temperature |                          |
| 45                | Evaporator Leaving Water Temp                       | Temperature of the water leaving the evaporator.            | Temperature |                          |
| 48                | High Side Oil Pressure- Compressor 1A               | Pressure of the oil at the high side of compressor 1A.      | Pressure    |                          |
| 49                | High Side Oil Pressure- Compressor 1B               | Pressure of the oil at the high side of compressor 1B.      | Pressure    |                          |
| 50                | High Side Oil Pressure- Compressor 2A               | Pressure of the oil at the high side of compressor 2A.      | Pressure    |                          |

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| Object Identifier | Object Name                             | Description  | Units       | Configuration Dependency |
|-------------------|---|--|-------------|--------------------------|
| 51                | High Side Oil Pressure- Compressor 2B   | Pressure of the oil at the high side of compressor 2B. | Pressure    |                          |
| 52                | Oil Temp- Compressor 1A                 | Temperature of the oil in compressor 1A.               | Temperature |                          |
| 52                | Oil Temp- Compressor 1B                 | Temperature of the oil in compressor 1B.               | Temperature |                          |
| 54                | Oil Temp- Compressor 2A                 | Temperature of the oil in compressor 2A.               | Temperature |                          |
| 55                | Oil Temp- Compressor 2B                 | Temperature of the oil in compressor 2B.               | Temperature |                          |
| 57                | Outdoor Air Temperature                 | Outdoor air temperature.                               | Temperature |                          |
| 59                | Phase AB Voltage- Compressor 1A         | Phase AB voltage, compressor 1A.                       | Voltage     |                          |
| 71                | Line 1 Current (in Amps)- Compressor 1A | Line 1 Current (in Amps)- Compressor 1A                | Current     |                          |
| 72                | Line 2 Current (in Amps)- Compressor 1A | Line 2 Current (in Amps)- Compressor 1A                | Current     |                          |
| 73                | Line 3 Current (in Amps)- Compressor 1A | Line 3 Current (in Amps)- Compressor 1A                | Current     |                          |
| 74                | Line 1 Current (in Amps)- Compressor 1B | Line 1 Current (in Amps)- Compressor 1B                | Current     |                          |
| 75                | Line 2 Current (in Amps)- Compressor 1B | Line 2 Current (in Amps)- Compressor 1B                | Current     |                          |
| 76                | Line 3 Current (in Amps)- Compressor 1B | Line 3 Current (in Amps)- Compressor 1B                | Current     |                          |
| 77                | Line 1 Current (in Amps)- Compressor 2A | Line 1 Current (in Amps)- Compressor 2A                | Current     |                          |
| 78                | Line 2 Current (in Amps)- Compressor 2A | Line 2 Current (in Amps)- Compressor 2A                | Current     |                          |
| 79                | Line 3 Current (in Amps)- Compressor 2A | Line 3 Current (in Amps)- Compressor 2A                | Current     |                          |
| 80                | Line 1 Current (in Amps)- Compressor 2B | Line 1 Current (in Amps)- Compressor 2B                | Current     |                          |
| 81                | Line 2 Current (in Amps)- Compressor 2B | Line 2 Current (in Amps)- Compressor 2B                | Current     |                          |
| 82                | Line 3 Current (in Amps)- Compressor 2B | Line 3 Current (in Amps)- Compressor 2B                | Current     |                          |
| 83                | Line 1 Current (%RLA)- Compressor 1A    | Line 1 Current (%RLA)- Compressor 1A                   | Percent     |                          |
| 84                | Line 2 Current (%RLA)- Compressor 1A    | Line 2 Current (%RLA)- Compressor 1A                   | Percent     |                          |
| 85                | Line 3 Current (%RLA)- Compressor 1A    | Line 3 Current (%RLA)- Compressor 1A                   | Percent     |                          |
| 86                | Line 1 Current (%RLA)- Compressor 1B    | Line 1 Current (%RLA)- Compressor 1B                   | Percent     |                          |
| 87                | Line 2 Current (%RLA)- Compressor 1B    | Line 2 Current (%RLA)- Compressor 1B                   | Percent     |                          |
| 88                | Line 3 Current (%RLA)- Compressor 1B    | Line 3 Current (%RLA)- Compressor 1B                   | Percent     |                          |
| 89                | Line 1 Current (%RLA)- Compressor 2A    | Line 1 Current (%RLA)- Compressor 2A                   | Percent     |                          |
| 90                | Line 2 Current (%RLA)- Compressor 2A    | Line 2 Current (%RLA)- Compressor 2A                   | Percent     |                          |
| 91                | Line 3 Current (%RLA)- Compressor 2A    | Line 3 Current (%RLA)- Compressor 2A                   | Percent     |                          |
| 92                | Line 1 Current (%RLA)- Compressor 2B    | Line 1 Current (%RLA)- Compressor 2B                   | Percent     |                          |
| 93                | Line 2 Current (%RLA)- Compressor 2B    | Line 2 Current (%RLA)- Compressor 2B                   | Percent     |                          |

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| Object Identifier | Object Name                          | Description                          | Units   | Configuration Dependency |
|-------------------|--------------------------------------|--------------------------------------|---------|--------------------------|
| 94                | Line 3 Current (%RLA)- Compressor 2B | Line 3 Current (%RLA)- Compressor 2B | Percent |                          |
| 95                | Number of Circuits                   | Number of Circuits                   | None    |                          |
| 96                | Number of Compressors, Ckt 1         | Number of Compressors, Ckt<br>1      | None    |                          |
| 97                | Number of Compressors, Ckt 2         | Number of Compressors, Ckt<br>2      | None    |                          |
| 98                | Chiller Design Capacity              | Design Capacity of the Chiller       | None    |                          |

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| Object Identifier | Object Name            | Description  | Dimensionality | Valid Range                        | Relinquish Default |
|-------------------|------------------------|--|----------------|------------------------------------|--------------------|
| 1                 | Chilled Water Setpoint | Desired leaving water temperature if chiller is in cooling mode. | Temperature    | 0°F to 75°F<br>(-17.8°C to 23.8°C) | 44°F<br>(6.7°C)    |
| 2                 | Current Limit Setpoint | Sets the maximum capacity that the chiller can use.              | Percent        | 0% to 120%                         | 100%               |



| Object Identifier | Object Name                   | Description   | Units   | Configuration Dependency |
|-------------------|-------------------------------|---|---|--------------------------|
| 1                 | Run Enabled                   | Indicates if the chiller is available to run or is currently running.                     | Inactive = Stop<br>Active = Auto                    |                          |
| 2                 | Local Setpoint Control        | Indicates if the chiller is being controlled by local setpoints instead of BAS setpoints. | Inactive = Remote Control<br>Active = Local Control |                          |
| 3                 | Capacity Limited              | Indicates if conditions may exist that prevent the chiller from reaching setpoint.        | Inactive = Not Limited<br>Active = Limited          |                          |
| 4                 | Chiller Running State         | Indicates if the chiller is running or stopped.   | Inactive = Off<br>Active = On                       |                          |
| 6                 | Maximum Capacity              | Indicates if all available chiller capacity is being used.                                | Inactive = Off<br>Active = On                       |                          |
| 9                 | Compressor 1A Running         | Indicates if compressor 1A is running.  | Inactive = Off<br>Active = Running                  |                          |
| 10                | Compressor 1B Running         | Indicates if compressor 1B is running.  | Inactive = Off<br>Active = Running                  |                          |
| 11                | Compressor 2A Running         | Indicates if compressor 2A is running.  | Inactive = Off<br>Active = Running                  |                          |
| 12                | Compressor 2B Running         | Indicates if compressor 2B is running.  | Inactive = Off<br>Active = Running                  |                          |
| 17                | Evaporator Water Pump Request | Indicates a request from the chiller to turn on the evaporator water pump.                | Inactive = Off<br>Active = On                       |                          |
| 22                | Evaporator Water Flow Status  | Indicates if water is flowing through the evaporator.                                     | Inactive = No Flow<br>Active = Flow                 |                          |
| 23                | Alarm Present                 | Indicates if an alarm is active.  | Inactive = No Alarm<br>Active = Alarm               |                          |
| 24                | Shutdown Alarm Present        | Indicates if a shutdown alarm is active.  | Inactive = No Alarm<br>Active = None                |                          |
| 25                | Last Diagnostic               | Indicates last diagnostic for the chiller.  | Inactive = Off<br>Active = On                       |                          |

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| Object Identifier | Object Name                     | Description  | Object States | Relinquish Default                                    |
|-------------------|---------------------------------|--|---------------|---|
| 1                 | Chiller Auto Stop Command       | Allows the chiller to run if conditions for running are met. | True          | Inactive = Stop<br>Active = Auto                      |
| 2                 | Remote Diagnostic Reset Command | Resets remotely diagnostics that can be reset.               | False         | Inactive = No Reset Request<br>Active = Reset Request |





| Object Identifier | Object Name             | Description  | Object States  | Configuration |
|-------------------|-------------------------|--|--|---------------|
| 1                 | Running Mode            | Indicates the primary running mode of the chiller.   | 1 = Chiller Off<br>2 = Chiller in Start Mode<br>3 = Chiller in Run Mode<br>4 = Chiller in Pre-shutdown Mode<br>5 = Chiller in Service Mode                                 |               |
| 2                 | Operating Mode          | Indicates the primary operating mode of the chiller. | 1 = HVAC_Cool<br>2 = HVAC_Heat<br><b>3 = HVAC_Ice (a)</b><br>4 = Not Used  |               |
| 3                 | MP Communication Status | <b>Do Not Use This Point</b>                         | <b>Do Not Use This Point</b>   |               |
| 4                 | Refrigerant Type        | Refrigerant type.                                    | 1 = R-11<br>2 = R-12<br>3 = R-22<br>4 = R-123<br>5 = R-134A<br>6 = R407C<br>7 = R-410A<br>8 = R-113<br>9 = R-114<br>10 = R-500<br>11 = R-502<br>12 = R-404A<br>13 = R-513A |               |



| Object Identifier | Object Name            | Description                              | Object States  | Configuration |
|-------------------|------------------------|--|--|---------------|
| 5                 | Model Information      | Indicates the model type of the chiller. | 1 = RTA<br>2 = CVH<br>3 = CVG<br>4 = CVR<br>5 = CDH<br>6 = RTH<br>7 = CGW<br>8 = CGA<br>9 = CCA<br>10 = RTW<br>11 = RTX<br>12 = RTU<br>13 = CCU<br>14 = CXA<br>15 = CGC<br>16 = RAU  |               |
| 6                 | Cooling Type           | Cooling type of the condenser.           | 1 = Water Cooled<br>2 = Air Cooled   |               |
| 7                 | Manufacturing Location | Location where chiller was manufactured. | 1 = Field Applied<br>2 = La Crosse <input type="checkbox"/><br>3 = Pueblo<br>4 = Charmes<br>5 = Rushville<br>6 = Macon<br>7 = Waco<br>8 = Lexington<br>9 = Forsyth<br>10 = Clarksville<br>11 = Ft. Smith<br>12 = Penang<br>13 = Colchester<br>14 = Curitiba<br>15 = Taicang<br>16 = Taiwan<br>17 = Epinal<br>18 = Golbey |               |

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| Object Identifier | Object Name          | Description                       | Object States | Relinquish Default   |
|-------------------|----------------------|-----------------------------------|---------------|--|
| 1                 | Chiller Mode Command | Mode of operation of the chiller. | 1 = Cool      | 1 = HVAC_Cool<br>2 = HVAC_Heat<br>3 = HVAC_Ice (a)<br>4 = Not Used |