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.

Object Identifier	Object Name	Description	Units	Configuration Dependency
1	Active Cool/Heat Setpoint Temperature	Active chiller water or hot water setpoint.	Temperature	
3	Active Demand Limit Setpoint	Active demand limit setpoint.	Percent	
5	Actual Running Capacity	Level of capacity that the chiller is currently running at.	Percent	
8	Suction Pressure- Ckt 1	Circuit 1 suction pressure.	Pressure	
11	Suction Pressure- Ckt 2	Circuit 2 suction pressure.	Pressure	
13	Suction Saturated Refrigerant Temperature- Ckt 1	Circuit 1 suction refrigerant temperature.	Temperature	
15	Suction Saturated Refrigerant Temperature- Ckt 2	Circuit 2 suction refrigerant temperature.	Temperature	
17	Discharge Pressure- Ckt 1	Circuit 1 discharge pressure.	Pressure	
19	Discharge Pressure- Ckt 2	Circuit 2 discharge pressure.	Pressure	
21	Discharge Saturated Refrigerant Temperature- Ckt 1	Circuit 1 discharge refrigerant temperature.	Temperature	
23	Discharge Saturated Refrigerant Temperature- Ckt 2	Circuit 2 discharge 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.		
30	Starts- Compressor 1C	Number of starts for compressor 1C.		
31	Starts- Compressor 2A	Number of starts for compressor 2A.		
32	Starts- Compressor 2B	Number of starts for compressor 2B.		
33	Starts- Compressor 2C	Number of starts for compressor 2C.		
34	Run Time- Compressor 1A	Total run time of compressor 1A.	Time	
35	Run Time- Compressor 1B	Total run time of compressor 1B.	Time	
38	Run Time- Compressor 1C	Total run time of compressor 1C.	Time	
39	Run Time- Compressor 2A	Total run time of compressor 2A.	Time	
40	Run Time- Compressor 2B	Total run time of compressor 2B.	Time	
41	Run Time- Compressor 2C	Total run time of compressor 2C.	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	
57	Outdoor Air Temperature	Outdoor air temperature.	Temperature	
95	Number of Circuits	Number of Circuits	None	

Object Identifier	Object Name	Description	Units	Configuration Dependency
96	Number of Compressors, Ckt 1	Number of Compressors, Ckt 1	None	
97	Number of Compressors, Ckt 2	Number of Compressors, Ckt 2	None	
98	Chiller Design Capacity	Design Capacity of the Chiller	None	
99	Heat Recovery Entering Water Temperature	Temperature of the water entering the auxiliary heat exchanger	Temperature	
100	Heat Recovery Leaving Water Temperature	Temperature of the water leaving the auxiliary heat exchanger	Temperature	
101	Heat Recovery Control Status	Active Command Percent of the Heat Recovery Analog Output for heat exchanger water flow rate adjustment	Percent	
102	Supplemental Heat Status	Supplemental Heat Control output status which is expressed as a percentage	Percent	Available only on heat pumps.

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 (-17.8°C to 23.8°C)	44°F (6.7°C)
3	Demand Limit Setpoint	Sets the maximum capacity that the chiller can use.	Percent	0% to 120%	100%
4	Hot Water Setpoint	Desired leaving water temperature if chiller is in heating mode. Leaving condenser water temperature control.	Temperature	80°F to 140°F (26.7°C to 60°C)	120°F (48.9°C)
6	Heat Recovery Leaving Water Temperature Setpoint BAS	Preferred Heat Recovery Leaving Water Temperature if chiller is in Heat Recovery mode	Temperature	80°F to 140°F (26.7°C to 60°C)	122°F (50°C)

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 Active = Auto	
2	Local Setpoint Control	Indicates if the chiller is being controlled by local setpoints instead of BAS setpoints.	Inactive =Remote Control Active = Local Control	
3	Capacity Limited	Indicates if conditions may exist that prevent the chiller from reaching setpoint.	Inactive = Not Limited Active = Limited	
4	Chiller Running State	Indicates if the chiller is running or stopped.	Inactive = Off Active = On	
6	Maximum Capacity	Indicates if all available chiller capacity is being used.	Inactive = Off Active = On	
9	Compressor 1A Running	Indicates if compressor 1A is running.	Inactive = Off Active = Running	
10	Compressor 1B Running	Indicates if compressor 1B is running.	Inactive = Off Active = Running	
13	Compressor 1C Running	Indicates if compressor 1C is running.	Inactive = Off Active = Running	
14	Compressor 2A Running	Indicates if compressor 2A is running.	Inactive = Off Active = Running	
15	Compressor 2B Running	Indicates if compressor 2B is running.	Inactive = Off Active = Running	
16	Compressor 2C Running	Indicates if compressor 2C is running.	Inactive = Off Active = Running	
18	Water Pump Request	Indicates a request from the chiller to turn on the water pump.	Inactive = Off Active = On	
20	Noise Reduction Active	Indicates if the chiller is in a state where noise is being reduced.	Inactive = Off Active = On	
21	Defrost Mode (or in Defrost)	Indicates if one or more circuits are in a defrost mode.	Inactive = Not in Defrost Active = Defrost	
22	Evaporator Water Flow Status	Indicates if water is flowing through the evaporator.	Inactive = No Flow Active = Flow	
23	Alarm Present	Indicates if an alarm is active.	Inactive = No Alarm Active = Alarm	
24	Shutdown Alarm Present	Indicates if a shutdown alarm is active.	Inactive = No Alarm Active = None	

Object Identifier	Object Name	Description	Units	Configuration Dependency
25	Last Diagnostic	Indicates last diagnostic for the chiller.	Inactive = Off Active = On	
26	Heat Recovery Control Active Status	Indicates if the chiller is changing behavior to get heat recovery	Inactive = Off Active = On	

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 Active = Auto
2	Remote Diagnostic Reset Command	Resets remotely diagnostics that can be reset.	False	Inactive = No Reset Request Active = Reset Request
4	Noise Reduction Request	Requests chiller to enter mode to reduce noise.	False	Inactive = Normal Active = Reduced Noise
5	Heat Recovery Enable BAS	Request chiller to enter in Heat Recovery control mode, which enables the heat recovery control feature on a chiller.	False	Inactive = Normal Active = Heat Recovery

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

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

Object Identifier	Object Name	Description	Object States	Relinquish Default
1	Chiller Mode Command	Mode of operation of the chiller.	1 = Cool	1 = HVAC _Cool 2 = HVAC_Heat 3 = HVAC_Ice (a) 4 = Not Used