

## Sales and Engineering Data Sheet

**ED 15100-5**

Group: **Controls**

Part Number: **ED 15100**

Date: **August 2022**

## MicroTech® II Chiller Unit Controller Protocol Information

### BACnet® Networks (IP, Ethernet)

WSC	Water-Cooled Centrifugal, Single-Compressor
WDC	Water-Cooled Centrifugal, Dual-Compressor
WPV	Water-Cooled Centrifugal, Single-Compressor
HSC	Water-Cooled Single-Compressor Centrifugal, Heat Recovery
HDC	Water-Cooled Dual-Compressor Centrifugal, Heat Recovery
TSC	Water-Cooled Single-Compressor Centrifugal, Templifier®
WMC	Water-Cooled Centrifugal, Magnetic Bearing
WCC	Water-Cooled Centrifugal, Dual Compressor Series Counterflow
AGZ	Air-Cooled Global Scroll
ACZ	Air-Cooled Scroll Condensing Unit
WGZ	Water-Cooled Global Scroll
AGS	Air-Cooled Global Screw
WGS	Water-Cooled Global Screw
TGZ	Templifier® Water Heater

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## Revision History

<u>Version</u>	<u>Release Date</u>	<u>Description</u>
ED 15100	June, 2006	Initial release.
ED 15100-1	September, 2009	Added TGZ model
ED 15100-2	June, 2012	Removed Minimum Send Time, Maximum Send Time, Receive Heartbeat and Default Values. These are not used in BACnet. Addition of data points for multiple compressors.
ED 15100-3	June, 2015	Specified that hours are reported at 1/10th the actual hours. Corrected Compressor Status for BACnet to be an enumerated value, not a bit field. Removed references to out-dated software/firmware. Added clarification to "Actual Capacity" data point for centrifugal chillers. Changed branding. Changed description of Chiller On Off data point.
ED 15100-4	October 2016	Removed Detailed Data section, updated BACnet firmware versions, corrected several range/default values in all data tables, corrected Password Menu table along with other formatting updates. Revised references to BACnet HTTP Page tool (now referred to as BACnet Web Configuration Interface), new Appendix B, and added information on using the interface to set network parameters on p.7.
ED 15100-5	August 2022	BACnet Network Object table corrections/clarifications. BACnet software/firmware updates. Clarification that Starter Alarm must be cleared locally on WMC. Updated Reference Documents.

## Software Revision

This edition documents the following versions of the standard MicroTech® II Communication Module software and all subsequent revisions until otherwise indicated. However, if your software is of a later revision, some of the information in this document may not completely describe your software.

<u>Software</u>	<u>Revision</u>
BACnet® Communication Module Application Software Version	2.15.4E

## Notice

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## Limited Warranty

Consult your local Daikin Applied representative for warranty details. To find your local Daikin Applied representative, go to [www.DaikinApplied.com](http://www.DaikinApplied.com).

## Reference Documents

Company	Number	Title	Source
American Society of Heating, Refrigerating and Air-Conditioning Engineers	ANSI/ASHRAE 135-2004	BACnet- A Data Communication Protocol for Building Automation and Control Networks	<a href="http://www.ashrae.org">www.ashrae.org</a>
Daikin Applied	IM 837	MicroTech II Chiller Unit Controller BACnet Communication Module- IP or Ethernet	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOM 1210	WMC - Magnetic Bearing Compressor Chiller Installation, Operation, and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOM 1274	WSC - Single Centrifugal Compressor Installation, Operation, and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOM 1281	WDC/WCC - Dual Centrifugal Compressor Installation, Operation, and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOM 1319	Templifier TGZ Heat Recovery Water Heaters Operating Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOM 1322	WGZ - Water-Cooled Scroll Chiller Operation and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOMM ACZ/AGZ (Legacy)	Air-Cooled Condensing Unit Installation, Operation, and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOMM AGZ (Legacy)	Air-Cooled Scroll Chiller Installation, Operation, and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOMM WPV (Legacy)	Centrifugal Chiller Installation, Operation, and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	OM 1127 (Legacy)	AGS - Air-Cooled Screw Chiller Operating Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	OM WGS (Legacy)	Water-Cooled Screw Chiller Operating Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
1. The legacy version of the BACnet Communication Module hardware consisted of a printed circuit board inside a tan metal enclosure, which was mounted to the door of the unit control panel.			

This document provides the information needed to integrate a MicroTech II Chiller Unit Controller from Daikin Applied into your Building Automation System (BAS). It includes all necessary BACnet® properties and corresponding MicroTech II Chiller Unit Controller data points. It also contains the BACnet Protocol Implementation and Conformance Statement. BACnet terms are not defined. Refer to the appropriate specifications and functional profile for definitions and details.

## Chiller Models

The following table lists the model designators of Daikin Applied chiller units and the corresponding description.

Unit Model Number	Description
WSC	Water-Cooled Centrifugal, Single-Compressor
WDC	Water-Cooled Centrifugal, Dual-Compressor
WPV	Water-Cooled Centrifugal, Packaged Unit
HSC	Water-Cooled Single-Compressor Centrifugal, Heat Recovery
HDC	Water-Cooled Dual-Compressor Centrifugal, Heat Recovery
TSC	Water-Cooled Single-Compressor Centrifugal, Templifier
WMC	Water-Cooled Centrifugal, Magnetic Bearing
WCC	Water-Cooled Centrifugal, Dual Compressor Series Counterflow
AGZ-A, B, C	Air-Cooled Global Scroll
ACZ-A, B	Air-Cooled Scroll, Condensing Unit
WGZ	Water-Cooled Global Scroll
AGS-A, B, C, D	Air-Cooled Global Screw
WGS	Water-Cooled Global Screw
TGZ	Templifier Water Heater

## Unit Controller Data Points

The MicroTech II Chiller Unit Controller contains data points or unit variables that are accessible from as many as four user interfaces: the unit controller keypad/display, the Operator Interface Touch Screen, a BACnet IP or BACnet Ethernet network, or the BACnet Web Configuration user interface. Refer to the [BACnet Web Configuration Interface](#) section or the BACnet Communication Module Installation Manual, IM 837, for complete details on accessing the interface and configuring the BACnet Communication Module ([www.DaikinApplied.com](http://www.DaikinApplied.com)).

Not all points are accessible from each interface. This manual lists all important data points, alarm messages, and the corresponding unit controller interface menu path, if available, for each network object. Refer to the respective chiller operation manual (see [Reference Documents](#) for document numbers).

## Protocol Definitions

The MicroTech II Chiller Unit Controller can be configured in a interoperable BACnet network. The unit controller must have the corresponding BACnet IP/Ethernet Communication Module installed for network integration.

The BACnet Communication Module communicates via BACnet IP or BACnet Ethernet. The BACnet Communication Module can be setup to communicate either Metric (SI) or English units of measurement via the BACnet Web Configuration Interface. In order to avoid conflict, both the chiller keypad/display and BACnet Communication Module must be setup to communicate the same units of measure (Metric or English).

## BACnet Protocol

The BACnet protocol is a standard communication protocol for Building Automation and Control Networks developed by the American National Standards Institute and American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE®) specified in ANSI/ASHRAE Standard 135-2004. It addresses all aspects of the various systems that are applied to building control systems. BACnet provides the communication infrastructure necessary to integrate products manufactured by different vendors and to integrate building services that are now independent.

## BACnet Networks

### Compatibility

The MicroTech II Chiller Unit Controller is tested according to the BACnet Testing Laboratory (BTL) Test Plan. It is designed to meet the requirements of the BACnet Standard (ANSI/ASHRAE 135-2004) as stated in the Protocol Implementation and Conformance Statement (PICS). The PICS is located at the end of this manual ([Appendix A: Protocol Implementation Conformance Statement \(PICS\)](#)).

### MicroTech II Chiller Unit Controller Device Object

MicroTech II Chiller Unit Controllers incorporate standard BACnet object types (i.e., object types defined in the BACnet Standard) that support the requirements of the BACnet Standard. Each object has properties that control unit variables or data points. Some object types occur more than once in the MicroTech II Chiller Unit Controller; each occurrence or instance has different properties and controls different unit variables or data points.

Each instance is designated with a unique instance index. Some properties can be adjusted (read/write properties, e.g., setpoints) from the network and others can only be interrogated (read-only properties, e.g., status information). Each BACnet compatible device must have only one BACnet Device Object.

All critical properties of the Device Object can be changed in the user interface and/or Daikin Applied's BACnet Web Configuration Interface. See [Configuring the Unit Controller](#) for additional information.

### Device Object Identifier

#### CAUTION

If another device in the network already has this Object Identifier (Instance Number), you must change the Instance Number of one Device Object so that all devices in the network have a unique device identifier.

The MicroTech II Chiller Unit Controller Device Object Identifier uniquely specifies the unit within the network. The Device Object type for all devices is fixed by ASHRAE at 8. Therefore, the Device Object Instance Number must be unique. The default Device Object Identifier (Device Instance) is set at 3000. The Device Object Identifier can be read from the unit controller.

Detailed information about the Device Object Name, object type, and Instance Number can be found in the [Comprehensive Data Point Tables](#) section. For further details on BACnet objects, please refer to ASHRAE Standard 135-2004 ([www.ashrae.org](http://www.ashrae.org)).

### Device Object Name

The Object Name is the description of the object in the device. Device Object Names must be unique within each BACnet device. The Device Name for the MicroTech II Chiller Unit Controller is MTII Chiller UC #####. The ##### represents the Device Object Instance Number. The Device Name is the "prefix" of all Object Names in the MicroTech II Chiller Unit Controller. All objects include the Device Name and a period "." (MTII Chiller UC #####.) preceding the Object Name.

The Device Object contains all required properties and the Max\_Master and Max\_Info\_Frames optional properties.

**NOTE:** Changing the Device Instance automatically changes the Device Name and thus the full reference for all objects.

## Configuring the Unit Controller

The MicroTech II Chiller Unit Controller is ready to operate with the pre-configured default values of the various parameters.

Most default values can be changed in one of four ways:

1) the unit controller keypad/display, 2) the Operator Interface Touch Screen (OITS) panel, 3) Daikin Applied's BACnet Web Configuration Interface, which is used to change settings via the BACnet Communication Module, or 4) from the BACnet network. Refer to the MicroTech II Chiller Unit Controller Operation Manual for unit settings and/or the MicroTech II BACnet IP/Ethernet Communication Module Installation Manual, IM 837, for adjusting network parameters ([www.DaikinApplied.com](http://www.DaikinApplied.com)).

## BACnet Web Configuration Interface

The BACnet Communication Module has a built-in, browser-based tool used to configure BACnet settings. The interface is organized by HTTP pages located within a series of tabs. Each HTTP page displays network properties, BACnet addressing parameters, and system configuration options. Specifically, the interface can be used to do the following:

- Adjust network settings such as IP Address and Device Instance Number (particularly with multiple chillers on a single network.)
- Configure parameters
- Test and verify communication with the MicroTech II Chiller Unit Controller
- Establish user(s) and password access
- Set BACnet Alarm notification and BACnet Communication Module clock
- Upgrade BACnet Communication Module firmware
- View all variables mapped to the MicroTech II Chiller Unit Controller (Variable Index numbers used for this purpose are referenced in [Table 3 - Table 9](#))

## Accessing and Using the BACnet Web Configuration Interface

Figure 1 shows the main page of the interface. This is a read-only screen with a number of setup parameters. The parameters that require setting depend on the data link layer of the BAS network. Device, Date/Time, and Alarms require settings for all BACnet networks. BACnet via Ethernet may not require network settings. However, BACnet via IP does require network settings.

Table 1 lists the primary network parameter settings and Device Object properties supported by the MicroTech II Chiller Unit Controller that are available via the BACnet Web Configuration Interface.

**NOTE:** The Device Instance, BACnet IP Address, IP Subnet Mask, UDP Port, and IP Router Address **must** be set using the BACnet Web Configuration Interface.

Follow these steps to access the BACnet Web Configuration Interface HTTP pages:

1. Connect your computer to the BACnet Communication Module.
2. Open your web browser.
3. Type in the IP Address. The default IP address is 172.16.5.8 and subnet mask is 255.255.0.0.

The following are the basic steps used to modify to the BACnet Communication Module:

**NOTE:** Refer to the MicroTech II BACnet IP/Ethernet Communication Module Installation Manual, IM 837, for detailed instructions on accessing and using the BACnet Web Configuration Interface ([www.DaikinApplied.com](http://www.DaikinApplied.com)).

1. Change the network settings (this includes the IP Address and Subnet Mask) on your computer and the options in your web browser (this step is done only if your computer is not already on the same subnet as the BACnet Communication Module.)
2. Access the desired BACnet Web Configuration Interface HTTP pages to change the desired parameters.
3. Press the Save Changes button and then reboot the BACnet Communication Module.
4. Switch your web browser and network back to the original settings.

Figure 1: BACnet Web Configuration Properties Page

<b>Device Properties</b>	
BACnet LAN Type	<input checked="" type="radio"/> BACnetIP <input type="radio"/> BACnet Ethernet
BACnet UDP Port	<input type="text" value="BAC0"/> hexadecimal
BCM Device Instance	<input type="text" value="3077"/> 0 to 4194303
Description	McQuay Chiller - IT Rev 1.3
Location	<input type="text" value="McQuay"/>
APDU Timeout	<input type="text" value="5000"/> milliseconds
Number of APDU Retries	<input type="text" value="4"/>
Password for Restart	<input type="text" value="1234"/>
Metric Units	<input type="radio"/> Yes <input checked="" type="radio"/> No
<b>Alarm Properties</b>	
Alarming Enabled	<input type="radio"/> Yes <input checked="" type="radio"/> No
Alarm Destination Device Instance	<input type="text" value="0"/> 0 to 4194303
Alarm Process Id	<input type="text" value="0"/>
Alarm Problem Priority	<input type="text" value="255"/> 0 to 255
Alarm Fault Priority	<input type="text" value="0"/> 0 to 255
Alarm Warning Priority	<input type="text" value="255"/> 0 to 255
<b>Clock Properties</b>	
Daylight Saving Time	<input type="radio"/> Yes <input checked="" type="radio"/> No
UTC offset	<input type="text" value="0"/> minutes (-720 to +720)
Interval to send WhoIs	<input type="text" value="1"/> minutes (0=none)
<b>BBMD Properties</b>	
IP Address for BBMD*	<input type="text" value="None"/> (blank or none=none)
Foreign Device Time-To-Live*	<input type="text" value="0"/> seconds
*Required if BCM must register as a Foreign Device with a BBMD	
<input type="button" value="Save Changes"/>	

**Table 1: BACnet Configuration Properties**

Property/Parameter		Value (Range)/Definition	Initial Value/Notes
<b>Device</b>	BACnet LAN Type	BACnet IP or BACnet Ethernet/Indicates the Data Link and Physical layers of the BAS network.	BACnet IP
	BACnet IP/UDP (User Datagram Protocol) Port	Identifies the application process in the BACnet Communication Module.	47808 (Decimal) BAC0 (Hex)
	Device Instance	0-4194303/Device Instance of the BACnet Communication Module.	3000/This must be unique throughout the entire BACnet network.
	Description	This property describes the application running in the BACnet Communication Module.	
	Location	This changeable property indicates the physical location of the MicroTech II Chiller.	
	APDU Timeout	The amount of time, in milliseconds, between retransmissions of an APDU requiring acknowledgment for which no acknowledgement has been received.	3000 Milliseconds
	Number of APDU Retries	The maximum number of times that an APDU shall be retransmitted.	3 Times
	Password for Restart	Password that allows the BACnet Communication Module to be reinitialized from the network.	1234/Blank. Indicates that no password is required. If a password is entered, a password is then required before a BACnet client can reinitialize this BACnet Communication Module.
	Metric Units	Yes or No/ Selecting Yes converts the Units and Relinquish Default properties to Metric units. Selecting No converts these properties to English units.	No/Changing this property does not affect the Present Value property read from the chiller. For centrifugal chillers, the units can be changed via the keypad.
<b>Network Addressing</b>	IP Address	IP Address of the BACnet Communication Module	172.16.5.8
	Subnet Mask	Subnet Mask of the BACnet Communication Module	255.255.0.0
<b>Alarms</b>	Alarming Enabled	Yes or No/Enabling this feature provides alarm annunciation from the BACnet Communication Module to a BACnet client. BACnet clients can also poll variables in a BACnet Communication Module for alarm information (see <a href="#">BACnet Alarm Management</a> section).	No/Selecting Yes enables the BACnet Communication Module to send a ConfirmedEventNotification message to a single BACnet device whenever an alarm occurs in the MicroTech II Chiller. This message has an Event Type = Complex Event and has proprietary properties in its Event Values section. Not all BACnet devices can accept this message.
	Alarm Destination Device Instance	0-4194303/Device Object of the BACnet device that receives the alarm notification.	1
	Alarm Process ID	The process used by the receiving BACnet device to determine the response action to the alarm notification.	1/May be changed to suit the BAS preference.
	Alarm Priority	Priority for Problem Alarms (0-255)	0/The lower the priority value, the higher the actual alarm priority.
	Alarm Fault Priority	Priority for Fault Alarms (0-255)	0/The lower the priority value, the higher the actual alarm priority.
	Alarm Warning Priority	Priority for Warning Alarms (0-255)	255/The lower the priority value, the higher the actual alarm priority.
<b>Clock Parameters</b>	Daylight Saving Time	Yes or No	No/Must be set to No for the BACnet Communication Module to synchronize the time on the network. Setting clock parameters is only necessary when the BAS network does not have a Time Master controller on the network.  Note that the clock must be reset any time power is lost to the chiller or if the BACnet Communication Module is rebooted.
	UCT Offset	Difference in minutes of the Universal Coordinated Time and local time ( -720 to + 720).	0 Minutes
	Interval to send Whols	The maximum frequency, in minutes, at which the BACnet Communication Module sends Whols Requests.	1 Minute
<b>BBMD Parameters</b>	IP Address for BBMD	IP Address for the BACnet Broadcast Management Device (BBMD) if used.	None
	Time-To-Live for Foreign Device Registration	The time, in seconds, within which the foreign device must re-register with the BBMD. If it does not re-register, the BBMD removes it from its Foreign Device Table (FDT) and discontinues forwarding messages to the foreign device.	0 Seconds

## Network Setup Instructions

The following section explains how to set the BAS network protocol from the MicroTech Chiller Unit Controller user interface. The steps vary somewhat depending on the type of chiller. Refer to the appropriate MicroTech II Unit Controller IOM for keypad display/touch screen menu operation details ([www.DaikinApplied.com](http://www.DaikinApplied.com)).

Once the BAS setup process is complete and communication has been established between the MicroTech II Unit Controller and the network, it is then possible to monitor and control unit operation. Some of the important functions include:

- Configure and monitor data points
- View and clear alarms
- Turn the unit on or off
- Operate the unit safely

### Network Setup for Centrifugal Chillers

1. Disable the chiller. The chiller should not be operating while performing this procedure.
2. At the chiller touch screen interface panel:
  - a. In the SETPOINTS/MODE screen, set the #9 setpoint to the applicable BAS network.
  - b. Enter the password of "2001."
  - c. In the SETPOINTS/MODE screen, change the #3 setpoint, Control Source, to BAS.
3. Re-enable the chiller.
4. Verify that the chiller is operational from the BAS interface.

### Password Menu Screens

Model	AGZ-A	ACZ-A	AGZ-B AGZ-C	ACZ-B	AGS-A AGS-B	AGS-C	AGS-D	WGS	WMC WSC WDC WCC WPV HSC HDC TSC	WGZ/TGZ
Menu Screen	12	6	9	7	12	16	17	15	14	10
Password	2001	2001	2001	2001	8945	8453	8745	8745	2001	2001

Note that chiller models AGZ-A/B, ACZ-A/B, WGZ, and TGZ have a single unit controller. Models AGS-B/C and WGS have one unit controller with multiple circuit controllers. Unit settings for AGS-B/C and WGS models are adjusted from the unit controller.

### Network Setup for all other Chillers

1. Disable the chiller. The chiller should not be operating while performing this procedure.
2. Set the Protocol default to the appropriate BAS network in the applicable menu screen.
  - a. Use the table below to determine the operator password for the specific chiller model.
  - b. Enter the password.
3. Adjust the Set/Unit Setpoint screen 1 to Source = Network.
4. Re-enable the chiller.
5. Verify that the chiller is operational from the BAS.

## Network Parameters

The following section defines the BACnet network parameters, or data points, available to the BAS from the MicroTech II Chiller Unit Controller. Table 2 lists all BACnet objects that are supported for each MicroTech II chiller model type.

**Table 2: Data Points for Chiller Models**

Data Point	WSC WDC WPV HSC HDC TSC WMC WCC	AGZ	ACZ	AGS	WGZ TGZ	WGS
Active Setpoint	X	X		X	X	X
Actual Capacity	X	X		X	X	X
Actual RPM	X <sup>5</sup>					
Alarm Digital Output	X	X	X	X	X	X
Capacity Limit Output	X	X <sup>1</sup>	X <sup>1</sup>	X	X	X
Capacity Limit Setpoint	X	X <sup>1</sup>	X <sup>1</sup>	X	X	X
Chiller Enable	X	X	X	X	X	X
Chiller Limited	X	X <sup>1</sup>	X <sup>1</sup>	X	X	X
Chiller Local/Remote	X	X	X	X	X	X
Chiller Location	X	X	X	X	X	X
Chiller Mode Output	X	X		X	X	X
Chiller Mode Setpoint	X	X		X	X	X
Chiller ON OFF	X	X	X	X	X	X
Chiller Power <sup>6</sup>	X	X	X	X	X	X
Chiller Status	X	X	X	X	X	X
Chiller Type	X	X		X	X	X
Clear Alarm	X	X	X	X	X	X
Compressor 2 Active Capacity Limit	X	X	X	X	X	X
Compressor 2 VFD Speed	X	X	X	X	X	X
Compressor Current <sup>2</sup>	X					X
Compressor Discharge Temperature	X			X		X
Compressor Percent RLA	X					X
Compressor Power <sup>2</sup>	X					X
Compressor Run Hours	X	X	X	X	X	X
Compressor Select	X	X	X	X	X	X
Compressor Starts	X	X	X	X	X	X
Compressor Status	X <sup>5</sup>					
Compressor Suction Line Temperature	X			X	X	X
Compressor Voltage <sup>2</sup>	X					X
Condenser Entering Water Temperature	X				X	X
Condenser Flow Switch Status	X				X	X
Condenser Leaving Water Temperature	X				X	X
Condenser Pump Run Hours	X					
Condenser Refrigerant Pressure	X	X	X	X	X	X
Condenser Saturated Refrigerant Temperature	X	X	X	X	X	X
Condenser Water Flow Rate	X					X
Condenser Water Pump Status	X				X	X
Cool Setpoint	X	X		X	X	X
Default Values	X	X	X	X	X	X
Design RPM	X <sup>5</sup>					
Device Object	X	X	X	X	X	X
Evaporator Entering Water Temperature	X			X	X	X
Evaporator Flow Switch Status	X	X	X	X	X	X
Evaporator Leaving Water Temperature for Unit	X	X		X	X	X
Evaporator Leaving Water Temperature for Compressor	X <sup>7</sup>					

1. Dual Circuit chillers only

2. Optional Solid State Starter required. Voltage, Power and Current are per compressor

3. Not available on WMC chiller

4. Available on AGS A and B vintage chillers only

5. Available on WMC chiller only

6. Optional Solid State Starter or Magnetic Bearing compressor required

7. Does not apply to centrifugal chillers manufactured after 2019

Data Point	WSC WDC WPV HSC HDC TSC WMC WCC	AGZ	ACZ	AGS	WGZ TGZ	WGS
Evaporator Pump Run Hours	X					
Evaporator Refrigerant Pressure	X	X	X	X	X	X
Evaporator Saturated Refrigerant Temperature	X	X	X	X	X	X
Evaporator Water Flow Rate	X					X
Evaporator Water Pump Status	X	X		X	X	X
Fault Alarms, Analog Input Object	X	X	X	X	X	X
Fault Alarms, Multi-state Input Object	X	X	X	X	X	X
Heat Recovery Entering Water Temperature	X					
Heat Recovery Leaving Water Temperature	X					
Heat Setpoint	X					
Ice Setpoint	X	X		X	X	X
IGV Percentage Open	X					
Inverter Temperature	X					
Liquid Line Refrigerant Pressure				X <sup>4</sup>		
Liquid Line Refrigerant Temperature	X			X <sup>4</sup>	X	
Maximum RPM	X					
Minimum RPM	X					
Motor Cavity Temperature	X <sup>5</sup>					
Oil Feed Pressure <sup>3</sup>	X					
Oil Feed Temperature <sup>3</sup>	X					
Oil Sump Pressure <sup>3</sup>	X					
Oil Sump Temperature <sup>3</sup>	X					
Outdoor Air Temperature		X	X	X		
Power Factor						
Problem Alarms, Analog Input Object	X	X	X	X	X	X
Problem Alarms, Multi-state Input Object	X	X	X	X	X	X
Pump Select	X					
Run Enabled	X	X	X	X	X	X
Warning Alarms, Analog Input Object	X	X	X	X	X	X
Warning Alarms, Multi-state Input Object	X	X	X	X	X	X

1. Dual Circuit chillers only
2. Optional Solid State Starter required. Voltage, Power and Current are per compressor
3. Not available on WMC chiller
4. Available on AGS A and B vintage chillers only
5. Available on WMC chiller only
6. Optional Solid State Starter or Magnetic Bearing compressor required
7. Does not apply to centrifugal chillers manufactured after 2019

# BACnet Network Objects

This section describes the data that is available to the BAS via the BACnet network. [Table 3](#) - [Table 8](#) contain the information needed to integrate the MicroTech II Chiller Unit Controller into the BACnet network. The tables are organized by Analog Inputs, Analog Values, Binary Inputs, Binary Values, Multi-State Inputs, and Multi-State Outputs. [Table 9](#) provides chiller alarm

objects. Each BACnet object may or may not be available on the unit controller interface. If it is available, the display menu shows one path where the object appears, but note that it may also be available on more than one keypad menu See [Appendix A: Protocol Implementation Conformance Statement \(PICS\)](#) and [Appendix B: Keypad Menu Paths](#).

**Table 3: Analog Inputs**

Point Name	Object Type/ Instance	Read/Write Access	BACnet Object Name	Variable Index <sup>1</sup>	Range/Default (In Units)	Description
Active Setpoint	AI:7	R	ActiveLvgWaterTarget	A 2	-40° - 199°F -40° - 93°C Default: NA	The current setpoint used to control the temperature of the Leaving Chilled Water or Leaving Hot Water. Based on the operating mode of the chiller, this value is derived from the Cool Setpoint, Heat Setpoint, or Ice Setpoint. The default mode is Cooling and is used unless changed by the Mode input.
Actual Capacity	AI:9	R	ChillerCapacity	A 10	0 - 160% Default: NA	The percent of capacity the chiller is currently producing. It may be more or less than the nominal capacity of the chiller. For positive displacement chillers (those using screw and scroll compressors) this is a percentage of total compressors running. For centrifugal chillers, this data point represents the combined percent RLA of the compressors.
Actual RPM		R			0 - 32,767 RPM Default: NA	The actual speed of the compressor.
Compressor 1	AI:56		Comp1ActualRPM	I 118		
Compressor 2	AI:60		Comp2ActualRPM	I 122		
Capacity Limit Output	AI:8	R	ActiveCapacityLimit	A 42	0 - 160% Default: NA	Measures the ratio of operating capacity to full capacity of the chiller. Indicates the current value of the Capacity Limit.
Chiller Power	AI:67	R	TotalChillerKW	I 116	0 - 65,535 kW Default: NA	Total compressor kilowatts.
Compressor 2 Active Capacity Limit	AI:88	R	Comp2ActiveCapLimit	A 107	0 - 100% Default: NA	The active capacity limit for compressor 2.
Compressor 2 VFD Speed	AI:80	R	Comp2Speed	A 99	0 - 100% Default: NA	The VFD speed for compressor 2.
Compressor Current		R			0 - 65,535 Amps Default: NA	The number of amps being drawn from the selected compressor. See <a href="#">Compressor Select</a> for more information.
Compressor Select	AI:51		Current	A 26		
Compressor 2	AI:76		Comp2Current	A 95		
Compressor 3	AI:95		Comp3Current	A 109		
Compressor 4	AI:103		Comp4Current	A 114		
Compressor 5	AI:111		Comp5Current	A 119		
Compressor 6	AI:117		Comp6Current	A 124		
Compressor Discharge Temperature		R			-459.9° - 621°F -273.3° - 327.2°C Default: NA	The refrigerant temperature of the selected compressor. See <a href="#">Compressor Select</a> for more information.  The current compressor refrigerant temperature of compressor 2. Not available on all chiller models. See <a href="#">Compressor Select</a> for more information.
Compressor Select	AI:18		DischargeTemp	A 19		
Compressor 2	AI:72		Comp2DischargeTmp	A 91		
Compressor Percent RLA		R			0 - 160% Default: NA	The motor current of the selected compressor. See <a href="#">Compressor Select</a> for more information.
Compressor Select	AI:24		CompMotorCurrentPercent	A 25		
Compressor 2	AI:75		Comp2CurrentPercent	A 94		
Compressor 3	AI:94		Comp3CurrentPercent	A 108		
Compressor 4	AI:102		Comp4CurrentPercent	A 113		
Compressor 5	AI:110		Comp5CurrentPercent	A 118		
Compressor 6	AI:116		Comp6CurrentPercent	A 123		
Compressor Power		R			0 - 65,535 kW Default: NA	The motor power of the selected compressor. See <a href="#">Compressor Select</a> for more information.
Compressor Select	AI:54		Kilowatts	A 27		
Compressor 2	AI:77		Comp2Kilowatts	A 96		
Compressor 3	AI:96		Comp3Kilowatts	A 110		
Compressor 4	AI:104		Comp4Kilowatts	A 115		
Compressor 5	AI:112		Comp5Kilowatts	A 120		
Compressor 6	AI:118		Comp6Kilowatts	A 125		

1. A = Analog, I - Integer, D = Digital. Variable Index types are displayed in the Variables page of the [BACnet Web Configuration Interface](#). Variable Index types represent the status of the BACnet points mapped to the MicroTech II chiller unit controller.

2. Property Values between BACnet point and the [BACnet Web Configuration Interface](#) are the same.

Point Name	Object Type/ Instance	Read/Write Access	BACnet Object Name	Variable Index <sup>1</sup>	Range/Default (In Units)	Description
Compressor Run Hours		R			0 - 65,535 hours* Default: NA	The number of hours the selected compressor motor has been running. See <a href="#">Compressor Select</a> for more information.  *Note the value returned must be multiplied by 10 to give actual run hours.
Compressor Select	AI:26		CompHours	I 46		
Compressor 2	AI:93		Comp2Hours	I 107		
Compressor 3	AI:101		Comp3Hours	I 110		
Compressor 4	AI:109		Comp4Hours	I 113		
Compressor Starts		R			0 - 65,535 starts Default: NA	The number of times the selected compressor motor has started. See <a href="#">Compressor Select</a> for more information.
Compressor Select	AI:25		CompStarts	I 45		
Compressor 2	AI:92		Comp2Starts	I 106		
Compressor 3	AI:100		Comp3Starts	I 109		
Compressor 4	AI:108		Comp4Starts	I 112		
Compressor Status		R			0 = Off 1 = Start Oil Pump 2 = Interlock/Prelube 3 = Run 4 = Shutdown 5 = Postlube Default: NA	Operating status of the compressor that is currently selected. See <a href="#">Compressor Select</a> for more information.
Compressor Select	AI:123		CompressorStatus	I 45		
Compressor 2	AI:91		Comp2Status	I 105		
Compressor 3	AI:99		Comp3Status	I 108		
Compressor 4	AI:107		Comp4Status	I 111		
Compressor 5	AI:115		Comp5Status	I 114		
Compressor 6	AI:121		Comp6Status	I 115		
Compressor Suction Line Temperature		R			-40° - 244°F -40° - 118°C Default: NA	The current suction line refrigerant temperature. There is a separate output for each compressor. See <a href="#">Compressor Select</a> for more information.  The current suction line refrigerant temperature for compressor 2. Not available on all chiller models. See <a href="#">Compressor Select</a> for more information.
Compressor Select	AI:15		SuctionTemp	A 15		
Compressor 2	AI:69		Comp2SuctTemp	A 88		
Compressor Voltage		R			0 - 65,535 VAC Default: NA	The current voltage of the selected compressor. There is a separate output for each compressor. See <a href="#">Compressor Select</a> for more information.
Compressor Select	AI:52		Voltage	A 29		
Compressor 2	AI:79		Comp2Voltage	A 98		
Compressor 3	AI:98		Comp3Voltage	A 112		
Compressor 4	AI:106		Comp4Voltage	A 117		
Compressor 5	AI:114		Comp5Voltage	A 122		
Compressor 6	AI:120		Comp6Voltage	A 127		
Condenser Entering Water Temperature	AI:3	R	EntCondWaterTemp	A 7	-40° - 244°F -40° - 118°C Default: NA	The current temperature of the water entering the condenser.
Condenser Leaving Water Temperature	AI:4	R	LvgCondWaterTemp	A 8	-40° - 244°F -40° - 118°C Default: NA	The current temperature of the leaving condenser water.
Condenser Pump Run Hours		R			0 - 65,535 hours* Default: NA	The number of hours that the selected condenser pump motor has been turned on. See <a href="#">Pump Select</a> for more information.  *Note the value returned must be multiplied by 10 to give actual run hours.  The number of hours that the selected condenser pump 2 has been turned on. Not available on all chiller models. <b>Note:</b> The value returned must be multiplied by 10 to give actual run hours.
Pump Select	AI:28		CondPumpOperHours	I 48		
Pump 2	AI:90		CondPmp2Hrs	I 104		
Condenser Refrigerant Pressure		R			-3,276.8 - 3,276.7 psi -22,592 - 22,592 kPa Default: NA	The current refrigerant pressure in the selected condenser. There is a separate output for each compressor. See <a href="#">Compressor Select</a> for more information.  The current refrigerant pressure for compressor 2. Not available on all chiller models.
Compressor Select	AI:16		CondPressure	A 21		
Compressor 2	AI:74		Comp2CondPress	A 93		
Condenser Saturated Refrigerant Temperature		R			-40° - 244°F -40° - 118°C Default: NA	The current saturated refrigerant temperature in the condenser. There is a separate output for each compressor. See <a href="#">Compressor Select</a> for more information.  The current saturated refrigerant temperature in the condenser for compressor 2. Not available on all chiller models.
Compressor Select	AI:17		CondSatTemp	A 20		
Compressor 2	AI:73		Comp2CondSatTemp	A 92		

1. A = Analog, I - Integer, D = Digital. Variable Index types are displayed in the Variables page of the [BACnet Web Configuration Interface](#). Variable Index types represent the status of the BACnet points mapped to the MicroTech II chiller unit controller.

2. Property Values between BACnet point and the [BACnet Web Configuration Interface](#) are the same.

Point Name	Object Type/ Instance	Read/Write Access	BACnet Object Name	Variable Index <sup>1</sup>	Range/Default (In Units)	Description
Condenser Water Flow Rate	AI:50	R	CondWaterFlowRate	A 24	0 - 65,534 GPM 0 - 4,135 Liters/Sec Default: NA	The current condenser water flow rate. Flow rate for centrifugal chillers measured in GPM only.
Design RPM		R			0 - 32,767 RPM Default: NA	Indicates the Turbocor compressor(s) calculated speed target based on conditions and request demand.
Compressor 1	AI:63		Comp1DesignRPM	I 125		
Compressor 2	AI:64		Comp2DesignRPM	I 126		
Evaporator Entering Water Temperature	AI:1	R	EntEvapWaterTemp	A 4	-40° - 245°F -40° - 118°C Default: NA	The temperature of the evaporator entering water temperature.
Evaporator Leaving Water Temperature for Unit	AI:2	R	LvgEvapWaterTempUnit	A 6	-40° - 244°F -40° - 118°C Default: NA	The current temperature of the evaporator leaving chilled water.
Evaporator Leaving Water Temperature for Compressor		R			-40° - 244°F -40° - 118°C Default: NA	The current leaving chilled water temperature of the selected compressor. See <a href="#">Compressor Select</a> for more information. Applies to centrifugal chillers only).
Compressor Select	AI:23		LvgEvapWaterTempComp	A 14		
Compressor 2	AI:68		Comp2EvapLvgWTmp	A 87		
Evaporator Pump Run Hours		R			0 - 65,535 hours* Default: NA	The number of hours that the selected evaporator pump has been turned on. There is a separate output for each pump. See <a href="#">Pump Select</a> . *Note the value returned must be multiplied by 10 to give actual run hours.
Pump Select	AI:27		EvapPumpOperHours	I 47		
Pump 2	AI:89		EvapPmp2Hrs	I 103		
Evaporator Refrigerant Pressure		R			-3,276.8 - 3,276.7 psi -22,592 - 22,592 kPa Default: NA	The current refrigerant pressure in the evaporator. There is a separate output for each compressor. See <a href="#">Compressor Select</a> for more information.
Compressor Select	AI:13		EvapPressure	A 17		
Compressor 2	AI:71		Comp2EvapPress	A 90		
Evaporator Saturated Refrigerant Temperature		R			-40° - 244°F -40° - 118°C Default: NA	The current saturated refrigerant temperature in the evaporator. There is a separate output for each compressor. See <a href="#">Compressor Select</a> for more information.
Compressor Select	AI:14		EvapSatTemp	A 16		
Compressor 2	AI:70		Comp2EvapSatRTmp	A 89		
Evaporator Water Flow Rate	AI:49	R	EvapWaterFlowRate	A 18	0 - 65,534 GPM Default: NA	The current evaporator water flow rate. Flow rate measured in GPM only for centrifugal chillers.
Heat Recovery Entering Water Temperature	AI:5	R	HeatRecEntWaterTemp	A 22	-40° - 244°F -40° - 118°C Default: NA	The current temperature of the water entering the heat recovery section.
Heat Recovery Leaving Water Temperature	AI:6	R	HeatRecLvgWaterTemp	A 23	-40° - 244°F -40° - 118°C Default: NA	The current temperature of the water leaving the heat recovery section.
IGV Percentage Open		R			0 - 110% Default: NA	The current percentage that vanes are open for each compressor (0% = closed, 110% = open/ full capacity).
Compressor 1	AI:58		Comp1IGVPercentOpen	I 120		
Compressor 2	AI:62		Comp2IGVPercentOpen	I 124		
Inverter Temperature		R			32 - 212°F 0 - 100°C Default: NA	The current drive temperature. There is a separate output for each compressor.
Compressor 1	AI:66		Comp1InverterTmp	A 86		
Compressor 2	AI:87		Comp2InverterTmp	A 106		
Liquid Line Refrigerant Pressure	AI:12	R	LiquidLinePress	A 38	-3,276.8 - 3,276.7 psi -22,592 - 22,592 kPa Default: NA	The current liquid line refrigerant pressure. There is a separate output for each compressor/circuit. See <a href="#">Compressor Select</a> for more information.

1. A = Analog, I - Integer, D = Digital. Variable Index types are displayed in the Variables page of the [BACnet Web Configuration Interface](#). Variable Index types represent the status of the BACnet points mapped to the MicroTech II chiller unit controller.

2. Property Values between BACnet point and the [BACnet Web Configuration Interface](#) are the same.

Point Name	Object Type/ Instance	Read/Write Access	BACnet Object Name	Variable Index <sup>1</sup>	Range/Default (In Units)	Description
Liquid Line Refrigerant Temperature		R			-40° - 244°F -40° - 118°C Default: NA	The current liquid line refrigerant temperature. There is a separate output for each compressor/circuit. See <a href="#">Compressor Select</a> for more information. For WCC, WSC, WDC, and WMC chillers, this is the LL Refrigerant Temperature for Circuit 1.
Compressor Select	AI:11		LiquidLineTemp	A 36		
Compressor 2	AI:85		Comp2LiqLineTemp	A 104		The current liquid line refrigerant temperature for compressor 2. Not available on all chiller models. For WCC chillers, this is the LL Refrigerant Temperature for Circuit 2. For WMC chillers, this is the Post-economizer LL Refrigerant Temperature (economizer is an optional feature). For WSC and WDC chillers, this data point does not apply.
Maximum RPM		R			0 - 32,767 RPM Default: NA	The maximum (choke) RPM. This is the speed the Turbocor compressor calculates above which the efficiency of the compressor begins to decrease.
Compressor 1	AI:55		Comp1MaxRPM	I 117		
Compressor 2	AI:59		Comp2MaxRPM	I 121		
Minimum RPM		R			0 - 32,767 RPM Default: NA	The minimum (surge) RPM. This is the speed the Turbocor compressor calculates as the minimum safe operating speed above onset of stall.
Compressor 1	AI:57		Comp1MinRPM	I 119		
Compressor 2	AI:61		Comp2MinRPM	I 123		
Motor Cavity Temperature		R			-4° - 212°F -20° - 100°C Default: NA	The current temperature of the compressor's motor starter cavity.
Compressor 1	AI:65		Comp1MotorCavityTmp	A 85		
Compressor 2	AI:86		Comp2MotorCavityTmp	A 105		
Oil Feed Pressure		R			-3,276.8 - 3,276.7 psi -22,592 - 22,592 kPa Default: NA	The current compressor oil feed pressure. There is a separate output for each compressor. See <a href="#">Compressor Select</a> for more information.
Compressor Select	AI:19		OilFeedPressure	A 32		
Compressor 2	AI:81		Comp2OilFeedPress	A 100		The current compressor oil feed pressure for compressor 2. Not available on all chiller models.
Oil Feed Temperature		R			-40° - 244°F -40° - 118°C Default: NA	The current compressor oil feed temperature. There is a separate output for each compressor. See <a href="#">Compressor Select</a> for more information.
Compressor Select	AI:21		OilFeedTemp	A 34		
Compressor 2	AI:83		Comp2OilFeedTemp	A 102		The current compressor oil feed temperature for compressor 2. Not available on all chiller models.
Oil Sump Pressure		R			-3,276.8 - 3,276.7 psi -22,592 - 22,592 kPa Default: NA	The current compressor oil sump pressure. There is a separate output for each compressor. See <a href="#">Compressor Select</a> for more information.
Compressor Select	AI:20		OilSumpPressure	A 33		
Compressor 2	AI:82		Comp2OilFeedPress	A 101		The current compressor oil sump pressure for compressor 2. Not available on all chiller models.
Oil Sump Temperature		R			-40° - 244°F -40° - 118°C Default: NA	The current compressor oil sump temperature. There is a separate output for each compressor. See <a href="#">Compressor Select</a> for more information.
Compressor Select	AI:22		OilSumpTemp	A 35		
Compressor 2	AI:84		Comp2OilSumpTemp	A 103		The current compressor oil sump temperature for compressor 2. Not available on all chiller models.
Outdoor Air Temperature	AI:10	R	OutdoorAirTemp	A 39	-40° - 244°F -40° - 118°C Default: NA	The current outdoor air temperature.
Power Factor		R			-99 - +100 Default: NA	The cosine of the phase angle between the voltage applied to a load and the current passing through the load. The power factor is assigned an analog value scaled by 0.01 (i.e. a value of +95 corresponds to a power factor of 0.95). For a more detailed description of power factor, see Application Guide AG 31-002, available on <a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a> .
Compressor Select	AI:53		PowerFactor	A 28		
Compressor 2	AI:78		Comp2PowerFactor	A 97		
Compressor 3	AI:97		Comp3PowerFactor	A 111		
Compressor 4	AI:105		Comp4PowerFactor	A 116		
Compressor 5	AI:113		Comp5PowerFactor	A 121		
Compressor 6	AI:119		Comp6PowerFactor	A 126		

1. A = Analog, I - Integer, D = Digital. Variable Index types are displayed in the Variables page of the [BACnet Web Configuration Interface](#). Variable Index types represent the status of the BACnet points mapped to the MicroTech II chiller unit controller.

2. Property Values between BACnet point and the [BACnet Web Configuration Interface](#) are the same.

**Table 4: Analog Outputs**

Point Name	Object Type/ Instance	Read/ Write Access	BACnet Object Name	Variable Index <sup>1</sup>	Range/Default (In Units)	Description
Capacity Limit Setpoint	AO:32	W	NetworkCapacityLimitPct	A 3	0 - 160% Default: 100%	Sets the chiller's maximum operating capacity as a percentage of full capacity. This level may be adjusted, but not above the specified limit. The input network variable sets the operating value (input). Refer to the appropriate MicroTech II Chiller Operation Manual for suitable variable values.

Cool Setpoint	AO:29	W	NetworkCoolTempSetpoint	A 1	10° - 120°F -12.2° - 48.9°C Default: 44°F / 6.7°C	Determines the temperature of the Leaving Chilled Water. Refer to the appropriate Operation Manual for suitable variable values.
Heat Setpoint	AO:31	W	NetworkHeatTempSetpoint	A 5	50° - 150°F 10° - 65.6°C Default: varies by model	Provides the heating setpoint (i.e. sets the temperature of the leaving evaporator water) when the chiller is operating in the heat mode. The value is ignored if the unit controller is in Cooling mode. Refer to the appropriate Operation Manual for suitable variable values.
Ice Setpoint	AO:30	W	NetworkIceTempSetpoint	A 50	15° - 35°F -9.5° - 1.7°C Default: 25°F / -3.9°C	Determines the temperature of the leaving evaporator water. Refer to the appropriate Operation Manual for suitable variable values.

1. A = Analog, I = Integer, D = Digital. Variable Index types are displayed in the Variables page of the [BACnet Web Configuration Interface](#). Variable Index types represent the status of the BACnet points mapped to the MicroTech II chiller unit controller.

2. Property Values between BACnet point and the [BACnet Web Configuration Interface](#) are the same.

**Table 5: Binary Inputs**

Point Name	Object Type/ Instance	Read/ Write Access	BACnet Object Name	Variable Index <sup>1</sup>	Range/Default (In Units)	Description
Chiller Limited	Bl:39	R	ChillerLimited	D 6	0 = Not Limited (Inactive) 1 = Limited (Active) Default: NA	Indicates the main running mode and states of the chiller, and whether conditions exist that prevent the chiller from reaching setpoint.
Chiller Local/Remote	Bl:38	R	ChillerLocalRemote	D 5	0 = Remote 1 = Local Default: NA	Indicates whether the chiller is in local control or allowed to be controlled remotely over the network.
Condenser Flow Switch Status	Bl:35	R	CondWaterFlowStatus	D 8	0 = No Flow (Inactive) 1 = Flow (Active) Default: NA	The status of the water flow through the condenser.
Condenser Water Pump Status	Bl:37	R	CondPumpState	D 31	0 = OFF (Inactive) 1 = ON (Active) Default: NA	Indicates whether the selected pump has been commanded on or off. See <a href="#">Pump Select</a> .
Evaporator Flow Switch Status	Bl:34	R	EvapWaterFlowStatus	D 7	0 = No Flow (Inactive) 1 = Flow (Active) Default: NA	The status of water flow through the evaporator.
Evaporator Water Pump Status	Bl:36	R	EvapPumpState	D 29	0 = OFF (Inactive) 1 = ON (Active) Default: NA	Indicates whether the selected pump has been commanded on or off. See <a href="#">Pump Select</a> .
Run Enabled	Bl:33	R	UnitOFF	D 2	0 = Off (Inactive) 1 = Run Allowed (Active) Default: NA	Indicates that the chiller can start if operating conditions are met. See <a href="#">Pump Select</a> .

1. A = Analog, I - Integer, D = Digital. Variable Index types are displayed in the Variables page of the [BACnet Web Configuration Interface](#). Variable Index types represent the status of the BACnet points mapped to the MicroTech II chiller unit controller.

2. Property Values between BACnet point and the [BACnet Web Configuration Interface](#) are the same.

**Table 6: Binary Values**

Point Name	Object Type/ Instance	Read/ Write Access	BACnet Object Name	Variable Index <sup>1</sup>	Range/Default (In Units)	Description
Chiller Enable	BV:41	W	ChillerEnable	D 1	0 = OFF (Disable) 1 = ON (Enable) Default: 0 = OFF	Enables (starts) the chiller to run if the operating conditions are satisfied, or disables (stops) the chiller from running. When this property is read, it indicates the current operating state of the chiller.

1. A = Analog, I - Integer, D = Digital. Variable Index types are displayed in the Variables page of the [BACnet Web Configuration Interface](#). Variable Index types represent the status of the BACnet points mapped to the MicroTech II chiller unit controller.

2. Property Values between BACnet point and the [BACnet Web Configuration Interface](#) are the same.

**Table 7: Multi-State Inputs**

Point Name	Object Type/ Instance	Read/ Write Access	BACnet Object Name	Variable Index <sup>1</sup>	Range/Default (In Units)	Description
Chiller Mode Output	MSI:44	R	ActiveMode	I 19	1 = Ice 2 = Cool 3 = Heat  Default: 2 = Cool	The current operating mode of the chiller.
Chiller Status	MSI:43	R	UnitStatus	I 18	1 = Off 2 = Start 3 = Run 4 = Pre-shutdown 5 = Service  Default: Determined by the current state of the chiller.	The unit status of the chiller.
Chiller Type	MSI:48	R	DaikinChillerType	I 28	1 = AGZS 2 = AGZD 3 = WGZD/TGZD 4 = WSC/WDC 5 = AGSU 6 = ACZS 7 = ACZD 8 = WMC 9 = WGSD 10 = AGSD 11 = AGZS 12 = AGZDU 13 = WGZU 14 = ACZSU 15 = ACZDU  Default: NA	The chiller model to which the MicroTech II unit controller is connected.

1. A = Analog, I - Integer, D = Digital. Variable Index types are displayed in the Variables page of the [BACnet Web Configuration Interface](#). Variable Index types represent the status of the BACnet points mapped to the MicroTech II chiller unit controller.

2. Property Values between BACnet point and the [BACnet Web Configuration Interface](#) are the same.

**Table 8: Multi-State Outputs**

Point Name	Object Type/ Instance	Read/ Write Access	BACnet Object Name	Variable Index <sup>1</sup>	Range/Default (In Units)	Description
Chiller Mode Setpoint	MSO:45	W	ChillerOperationMode	I 17	1 = Ice 2 = Cool 3 = Heat Default: 2 = Cool	Sets the mode of operation for the chiller. Refer to the appropriate MicroTech II Chiller Operating Manual for suitable variable values.
Compressor Select	MSO:46	W	CompSelect	I 32	1 - 6 (See Description column for details) Default: 1	<p>Selects the compressor (No.1, 2, 3, 4, 5 or 6) that is to be interrogated. The unit controller returns the information for the selected compressor. First select a compressor, then interrogate the selected compressor. See <a href="#">Table 2</a> to determine the network points available for each chiller type.</p> <p>Compressor values and descriptions are as follows:</p> <p>1 = Comp1 (on Circuit No. 1 on Scroll Chillers and Condensing Units)</p> <p>2 = Comp2 (on Circuit No. 2 on Scroll Chillers and Condensing Units)</p> <p>3 = Comp3 (on Circuit No. 1 on Scroll Chillers and Condensing Units)</p> <p>4 = Comp4 (on Circuit No. 2 on Scroll Chillers and Condensing Units)</p> <p>5 = Comp5 (on Circuit No. 1 on Scroll Chillers and Condensing Units)</p> <p>6 = Comp6 (on Circuit No. 2 on Scroll Chillers and Condensing Units)</p> <p>The following points are supported by Compressor Select:</p> <ul style="list-style-type: none"> <li>• Compressor Current</li> <li>• Compressor Discharge Temperature</li> <li>• Compressor Percent RLA</li> <li>• Compressor Power</li> <li>• Compressor Run Hours</li> <li>• Compressor Starts</li> <li>• Compressor Status</li> <li>• Compressor Voltage</li> <li>• Condenser Refrigerant Pressure</li> <li>• Condenser Saturated Refrigerant Temperature</li> <li>• Evaporator Leaving Water Temperature for Compressor</li> <li>• Evaporator Refrigerant Pressure</li> <li>• Evaporator Saturated Refrigerant Temperature</li> <li>• Liquid Line Refrigerant Pressure</li> <li>• Liquid Line Refrigerant Temperature</li> <li>• Oil Feed Pressure</li> <li>• Oil Feed Temperature</li> <li>• Oil Sump Pressure</li> <li>• Oil Sump Temperature</li> </ul>
Pump Select	MSO:47	W	PumpSelect	D 19	1 = Pump 1 2 = Pump 2 Default: 1	<p>Selects which pump (No.1 or No. 2) supplies the data. The unit controller returns the information for the respective condenser or evaporator pump. Select the desired pump first and then interrogate it.</p> <p>See <a href="#">Condenser Pump Run Hours</a> and <a href="#">Evaporator Pump Run Hours</a>.</p>

1. A = Analog, I - Integer, D = Digital. Variable Index types are displayed in the Variables page of the [BACnet Web Configuration Interface](#). Variable Index types represent the status of the BACnet points mapped to the MicroTech II chiller unit controller.

2. Property Values between BACnet point and the [BACnet Web Configuration Interface](#) are the same.

**Table 9: Chiller Alarm Points**

Point Name	Object Type/ Instance	Read/ Write Access	BACnet Object Name	Variable Index <sup>1</sup>	Range/Default (In Units)	Description
Alarm Digital Output	BI:40	R	AlarmDigitalOutput	D 3	0 = No Alarm 1 = Alarm Default: NA	The Poll Singular method requires one Binary Input object in the BACnet Communication Module to be polled for alarm notification. This object indicates whether an alarm condition has occurred. The user interface displays the alarm text.  See the <a href="#">BACnet Alarm Management</a> section for additional information.
Clear Alarm	BV:42	W	ClearAlarm	D 24	0 = Normal 1 = Clear Alarm Default: NA	Clears all active alarms. It cannot clear all alarms in the Fault category (alarms that shut down the chiller). Fault alarms must be cleared from the chiller.  See the <a href="#">BACnet Alarm Management</a> section for additional details.  The alarms that are cleared at the chiller but not over the network are as follows: <ul style="list-style-type: none"> <li>• Low Evaporator Pressure</li> <li>• High Condenser Pressure (by pressure sensor)</li> <li>• High Condenser Pressure (by pressure switch)</li> <li>• Low Oil Pressure</li> <li>• Freeze Protection</li> <li>• High Motor Temperature</li> <li>• Starter Fault (WMC Only)</li> </ul> <p><i>Note that the above list pertains only to centrifugal chillers. The only alarm that can be cleared remotely on all other chiller types is the Flow Loss alarm.</i></p>

1. A = Analog, I - Integer, D = Digital. Variable Index types are displayed in the Variables page of the [BACnet Web Configuration Interface](#). Variable Index types represent the status of the BACnet points mapped to the MicroTech II chiller unit controller.

2. Property Values between BACnet point and the [BACnet Web Configuration Interface](#) are the same.

## BACnet Alarm Management

The MicroTech II Chiller Unit Controller has various ways of managing alarms. Using one of the mechanisms described in this section, alarms can be recognized, acknowledged, and cleared. Alarms are managed using the unit controller keypad/display or from the BAS.

Alarms and other changes to object property values are supported by BACnet EventNotification Services. Refer to [Table 10](#) for a description of how the MicroTech II Chiller Unit Controller implements the event notification service.

### Alarm Classes

BACnet alarms in a MicroTech II Chiller Unit Controller are divided into three classes: Faults, Problems, and Warnings. Fault alarms have the highest severity level. Problem alarms have medium severity level. Warning alarms have the lowest severity level.

#### Fault Alarms

Fault alarms require an acknowledgment from the operator. These alarms indicate that the compressor is shut down.

#### Problem Alarms

Problem alarms do not cause compressor shutdown but limit operation of the chiller in some way.

#### Warning Alarms

A warning is enunciated whenever an abnormal condition exists which does not affect chiller operation.

## BACnet Alarm Monitoring

The BACnet Communication Module has three methods for handling BACnet alarms: Alarm Annunciation, Poll Multiple, and Poll Singular.

### Alarm Annunciation

This method of alarm notification sends a BACnet ConfirmedEventNotification to a single BACnet device specified in the BACnet Web Configuration Interface interface. Refer to MicroTech II Chiller Unit Controller BACnet Communication Module, IM 837, for instructions on using the tool ([www.DaikinApplied.com](http://www.DaikinApplied.com)).

The ConfirmedEventNotification Service properties are described in [Table 10](#). See ANSI/ASHRAE 135-2004, BACnet-A Data Communication Protocol for Building Automation and Control Networks for detailed definitions.

Not all BACnet devices can receive an alarm message of this type. A BAS integrator may not want to use this method to handle alarms. If either case is true, it is possible to use the Poll Multiple or Poll Singular method.

### Poll Multiple

The Poll Multiple method requires that three objects in the BACnet Communication Module are polled for alarm notification. One object indicates Warning Alarms, one indicates Problem Alarms, and one indicates Fault Alarms. The BACnet Communication Module includes three Analog Input and three Multi-state objects that contain the alarm information. The Analog Input objects return a number for an alarm condition. The Multi-state object returns the same number for the alarm condition and the text of the alarm message.

See [Table 11](#) - [Table 13](#) for a description of the Analog Input alarm objects and Multi-state objects for all Warning, Problem, and Fault alarm messages supported by BACnet.

### Poll Singular

#### Alarm Digital Output

The Poll Singular method requires that one Binary Input object in the BACnet Communication Module be polled for alarm notification. This object indicates whether an alarm condition has occurred. The operator interface displays the alarm text. See [Table 9](#) for additional information on the Alarm Digital Output object. [Table 11](#) - [Table 13](#) provide the complete list of all Warning, Problem, and Fault alarm messages supported by BACnet.

**Table 10: Event Notification Service Details**

Field	Source
Process Identifier	Device Instance Process ID as specified in the BACnet Web Configuration Interface
Initiating Device Identifier	Device Instance of the BACnet Communication Module as specified in the BACnet Web Configuration Interface
Event Object Identifier	Object Instance that generated the Alarm. (Subtract 1000 from this value to get the instance of the object in the BACnet Communication Module)
Time Stamp	The time the BACnet Communication Module detected the alarm initially
Notification Class	P = Problems W = Warnings F = Faults
Priority	Priority specified in the BACnet Web Configuration Interface
Event Type	Complex Event
Message Text	Alarm Message Text as shown in <a href="#">Table 11</a> - <a href="#">Table 13</a>
Notify Type	ALARM
AckRequired	Alarm Notification Requirement
From State	The Event State of the BACnet Communication Module before the occurrence of the event that caused Alarm
To State	The Event State of the BACnet Communication Module after the occurrence of the event that caused the Alarm
Event Values	Conditions in the BACnet Communication Module at the time of the alarm. Each number in the Event Values column of <a href="#">Table 11</a> - <a href="#">Table 13</a> is the instance number of an object in the BACnet Communication Module that displays its present value in this field of the Event Notification message

## Clearing Alarms

Alarms within the MicroTech II Chiller Unit Controller can be cleared via BACnet by setting the ClearAlarm variable to a value of one (1). After the alarms are cleared, this variable returns to Normal (0). The alarms that **must** be cleared at the chiller (i.e. cannot be cleared from the network) are as follows:

- Low Evaporator Pressure
- High Condenser Pressure (by pressure sensor)
- High Condenser Pressure (by pressure switch)
- Low Oil Pressure (WSC/WDC/WCC)
- Freeze Protection
- High Motor Temperature
- Starter Fault (WMC Only)

See Table 9 for the full description of Clear Alarm.

**NOTE:** The above list pertains only to centrifugal chillers. The only alarm that can be cleared remotely on all other chiller types is the Flow Loss alarm.

## BACnet Alarm Messages

The following section identifies each alarm, class, whether an acknowledgement is required, the alarm text, and indicates system parameters at the time of the alarm. The tables are organized by Warning, Problem, and Fault alarms. Conditions in the BACnet Communication Module at the time of the alarm.

**Table 11: BACnet Warning Alarms**

Point Name	Object Type/Instance	Read/Write Access	BACnet Object Name	Range (In Units)	Description
Analog Input Object	AI:902	R	AIWarningAlarm	Enumerated	Indicates the index number of Warning alarms. If the Present Value is zero, no alarm has occurred
Multi-state Input Object	MSI:902	R	MSIWarningAlarm	Enumerated	Indicates the index number of Warning alarms in the Present Value property If the present value is zero, no alarm has occurred.
	MSI:902	R	MSIWarningAlarm	30 characters max	Indicates the text of the alarm message in the State Text property.

Warning Alarm Number	Description	Event Values <sup>2</sup>	WSC WDC WPV HSC HDC TSC WMC WCC	AGZ	ACZ	WGZ TGZ	AGS	WGS
1	NO ACTION - Condenser Entering Water Temperature Sensor Failure	1,2,3,4,9	X					
2	NO ACTION - Evaporator Entering Water Temperature Sensor Failure	1,2,3,4,9,10	X			X	X	X
3	NO ACTION - Liquid Line Refrigerant Temperature Sensor Failure	1,2,3,4,9	X			X		
4	NO ACTION (STOP if Heat) - Condenser Leaving Water Temperature Sensor Failure	1,2,3,4,9	X			X		
9	Expansion Alarm - Warning	1,2,9,10				X	X	
239	Warning - Chiller Capacity Limited	1,2,3,4,9,10	X <sup>1</sup>					

1. WMC chiller only

2. Event Values are supported by the ConfirmedEventNotification feature. The values shown for each alarm correspond to the instance number of an object in the BACnet Communication Module that displays its present value in this field of the Event Notification message

**Table 12: BACnet Problem Alarms**

Point Name	Object Type/ Instance	Read/Write Access	BACnet Object Name	Range (In Units)	Description
Analog Input Object	AI:900	R	AIProblemAlarm	Enumerated	Indicates the index number of Problem alarms. If the Present Value is zero, no alarm has occurred
Multi-state Input Object	MSI:900	R	MSIProblemAlarm	Enumerated	Indicates the index number of Problem alarms in the Present Value property If the present value is zero, no alarm has occurred.
	MSI:900	R	MSIProblemAlarm	30 characters max	Indicates the text of the alarm message in the State Text property.

Problem Alarm Number	Description	Event Values <sup>7</sup>	WSC WDC WPV HSC HDC TSC WMC WCC	AGZ	ACZ	WGZ TGZ	AGS	WGS
5	RESTART DELAYED - Power Loss While Running 1	1,2,9,10	X <sup>8</sup>				X	X
6	RESTART DELAYED - Power Loss While Running 2	1,2,9,10	X <sup>8</sup>				X	X
7	RESTART DELAYED - Power Loss While Running 3	1,2,9,10					X <sup>2</sup>	
10	START INHIBITED - Ambient Temperature Low	1,2,3,4,9,10		X	X	X	X	X
11	INHIBIT LOAD - Condenser Pressure High 1	1,2,9,10		X <sup>5</sup>	X <sup>3</sup>	X	X	X
12	INHIBIT LOAD - Condenser Pressure High 2	1,2,9,10		X <sup>5</sup>	X <sup>3</sup>	X	X	X
13	INHIBIT LOAD - Condenser Pressure High 3	1,2,9,10					X <sup>2</sup>	
15	UNLOAD - Condenser Pressure High	1,2,9,10		X	X			
16	UNLOAD - Condenser Pressure High 1	1,2,3,4,9,10		X <sup>5</sup>	X <sup>3</sup>	X	X	X
17	UNLOAD - Condenser Pressure High 2	1,2,3,4,9,10		X <sup>5</sup>	X <sup>3</sup>	X	X	X
18	UNLOAD - Condenser Pressure High 3	1,2,9,10					X <sup>2</sup>	
20	CONDENSER PUMP ON - Condenser Water Freeze Protection 1	1,2,3,4,9	X			X		
21	CONDENSER PUMP ON - Condenser Water Freeze Protection 2	1,2,3,4,9	X			X		
24	PUMP 2 START ATTEMPTED - Condenser Pump 1 Failure	1,2,3,4,9	X					
25	PUMP 1 START ATTEMPTED - Condenser Pump 2 Failure	1,2,3,4,9	X					
26	LOAD - Discharge Temperature High 1	1,2,3,4,9	X					
27	LOAD - Discharge Temperature High 2	1,2,3,4,9	X					
30	NO EWT RESET - Entering Evaporator Temperature Sensor Failure	1,2,3,4,9	X					
31	INHIBIT LOAD - Evaporator Pressure Low	1,2,3,4,9,10		X <sup>6</sup>	X <sup>4</sup>			
32	INHIBIT LOAD - Evaporator Pressure Low 1	1,2,3,4,9,10	X	X <sup>5</sup>	X <sup>3</sup>	X	X	X
33	INHIBIT LOAD - Evaporator Pressure Low 2	1,2,3,4,9,10	X	X <sup>5</sup>	X <sup>3</sup>	X	X	X
34	INHIBIT LOAD - Evaporator Pressure Low 3	1,2,9,10					X <sup>2</sup>	
36	UNLOAD - Evaporator Pressure Low	1,2,3,4,9,10		X <sup>6</sup>	X <sup>4</sup>			
37	UNLOAD - Evaporator Pressure Low 1	1,2,3,4,9,10	X	X <sup>5</sup>	X <sup>3</sup>	X	X	X
38	UNLOAD - Evaporator Pressure Low 2	1,2,3,4,9,10	X	X <sup>5</sup>	X <sup>3</sup>	X	X	X
39	UNLOAD - Evaporator Pressure Low 3	1,2,9,10					X <sup>2</sup>	
41	UNLOAD - Compressor Motor Current High 1	1,2,3,4,9,10	X					
42	UNLOAD - Compressor Motor Current High 2	1,2,3,4,9,10	X					
43	UNLOAD - Compressor Motor Current High 3	1,2,9,10					X <sup>2</sup>	
45	EVAPORATOR PUMP ON - Evaporator Water Freeze Protection Comp 1	1,2,3,4,9	X					
46	EVAPORATOR PUMP ON - Evaporator Water Freeze Protection Comp 2	1,2,3,4,9	X					
49	PUMP 2 START ATTEMPTED - Evaporator Pump 1 Failure	1,2,3,4,9	X					
50	PUMP 1 START ATTEMPTED - Evaporator Pump 2 Failure	1,2,3,4,9	X					

1. AGS C Vintage chiller only (two circuits only)

2. AGS B Vintage chiller only (up to three circuits)

3. ACZ Dual Circuit chiller only

4. ACZ Single Circuit chiller only

5. AGZ Dual Circuit chiller only

6. AGZ Single Circuit chiller only

7. Event Values are supported by the ConfirmedEventNotification feature. The values shown for each alarm correspond to the instance number of an object in the BACnet Communication Module that displays its present value in this field of the Event Notification message

8. WMC Only

**Table 13: BACnet Fault Alarms**

Point Name	Object Type/ Instance	Read/Write Access	BACnet Object Name	Range (In Units)	Description
Analog Input Object	AI:901	R	AlFaultAlarm	NA	Indicates the index number of Fault alarms. If the present value is zero, no alarm has occurred.
Multi-state Input Object	MSI:901	R	MSIFaultAlarm	Enumerated	Indicates the index number of Fault Alarms in the Present Value property if the Present Value is zero, no alarm has occurred.

Fault Alarm Number	Description	Event Values <sup>9</sup>	WSC WDC WPV HSC HDC TSC WMC WCC	AGZ	ACZ	WGZ TGZ	AGS	WGS
52	COMPRESSOR SHUTDOWN - Outside Air Temperature Sensor Fault	1,2,3,4,9,10		X	X	X	X	X
53	COMPRESSOR SHUTDOWN - Current Overload Trip 1	1,2,3,4,9,10	X				X	X
54	COMPRESSOR SHUTDOWN - Current Overload Trip 2	1,2,3,4,9,10	X				X	X
55	COMPRESSOR SHUTDOWN - Current Overload Trip 3	1,2,9,10					X <sup>2</sup>	
57	COMPRESSOR SHUTDOWN - Motor Current Imbalance 1	1,2,9,10	X				X	X
58	COMPRESSOR SHUTDOWN - Motor Current Imbalance 2	1,2,9,10	X				X	X
61	COMPRESSOR SHUTDOWN - Low Motor Current 1	1,2,9,10	X					
62	COMPRESSOR SHUTDOWN - Low Motor Current 2	1,2,9,10	X					
65	UNIT SHUTDOWN - Motor Protector Trip	1,2,3,4,9,10		X <sup>6</sup>	X <sup>4</sup>			
66	COMPRESSOR SHUTDOWN - Motor Protector Trip 1	1,2,3,4,9,10		X <sup>5</sup>	X <sup>3</sup>	X		
67	COMPRESSOR SHUTDOWN - Motor Protector Trip 2	1,2,3,4,9,10		X <sup>5</sup>	X <sup>3</sup>	X		
68	COMPRESSOR SHUTDOWN - Motor Temperature High 1	1,2,3,4,9,10	X				X	X
69	COMPRESSOR SHUTDOWN - Motor Temperature High 2	1,2,3,4,9,10	X				X	X
70	COMPRESSOR SHUTDOWN - Motor Temperature High 3	1,2,9,10					X <sup>2</sup>	
72	COMPRESSOR SHUTDOWN - Phase Loss 1	1,2,3,4,9,10	X <sup>7</sup>	X <sup>5</sup>	X <sup>3</sup>	X	X <sup>1</sup>	X
73	COMPRESSOR SHUTDOWN - Phase Loss 2	1,2,3,4,9,10	X <sup>7</sup>	X <sup>5</sup>	X <sup>3</sup>	X	X <sup>1</sup>	X
74	COMPRESSOR SHUTDOWN - Phase Loss 3	1,2,9,10					X <sup>2</sup>	
76	COMPRESSOR SHUTDOWN - Phase Reversal 1	1,2,3,4,9,10	X <sup>7</sup>				X <sup>1</sup>	X
77	COMPRESSOR SHUTDOWN - Phase Reversal 2	1,2,3,4,9,10	X <sup>7</sup>				X <sup>1</sup>	X
78	COMPRESSOR SHUTDOWN - Phase Reversal 3	1,2,9,10					X <sup>2</sup>	
80	COMPRESSOR SHUTDOWN - Overvoltage 1	1,2,3,4,9,10	X <sup>11</sup>				X <sup>1</sup>	X
81	COMPRESSOR SHUTDOWN - Overvoltage 2	1,2,3,4,9,10	X <sup>11</sup>				X <sup>1</sup>	X
82	COMPRESSOR SHUTDOWN - Overvoltage 3	1,2,9,10					X <sup>2</sup>	
84	COMPRESSOR SHUTDOWN - Undervoltage 1	1,2,3,4,9,10	X <sup>11</sup>				X	X
85	COMPRESSOR SHUTDOWN - Undervoltage 2	1,2,3,4,9,10	X <sup>11</sup>				X	X
86	COMPRESSOR SHUTDOWN - Undervoltage 3	1,2,9,10					X <sup>2</sup>	
88	COMPRESSOR SHUTDOWN - Condenser Pressure Sensor Fault	1,2,3,4,9,10		X <sup>6</sup>	X <sup>4</sup>			
89	COMPRESSOR SHUTDOWN - Condenser Pressure Sensor Fault 1	1,2,3,4,9,10	X	X <sup>5</sup>	X <sup>3</sup>	X	X	X
90	COMPRESSOR SHUTDOWN - Condenser Pressure Sensor Fault 2	1,2,3,4,9,10	X	X <sup>5</sup>	X <sup>3</sup>	X	X	X
91	COMPRESSOR SHUTDOWN - Condenser Pressure Sensor Fault 3	1,2,9,10					X <sup>2</sup>	
93	COMPRESSOR SHUTDOWN - Condenser Water Flow Loss	1,2,3,4,9	X			X		
94	COMPRESSOR SHUTDOWN - Condenser Pressure High	1,2,3,4,9,10	X	X <sup>6</sup>	X <sup>4</sup>			
95	COMPRESSOR SHUTDOWN - Condenser Pressure High 1	1,2,3,4,9,10	X	X <sup>5</sup>	X <sup>3</sup>	X	X	X
96	COMPRESSOR SHUTDOWN - Condenser Pressure High 2	1,2,3,4,9,10	X	X <sup>5</sup>	X <sup>3</sup>	X	X	X
97	COMPRESSOR SHUTDOWN - Condenser Pressure High 3	1,2,9,10					X <sup>2</sup>	
99	COMPRESSOR OFF - Current High with Compressor OFF 1	1,2,3,4,9	X					
100	COMPRESSOR OFF - Current High with Compressor OFF 2	1,2,3,4,9	X					
103	COMPRESSOR SHUTDOWN - Discharge Temperature Sensor Fault 1	1,2,3,4,9,10	X <sup>10</sup>				X	X

1. AGS C Vintage chiller only (two circuits only)

2. AGS B Vintage chiller only (up to three circuits)

3. ACZ Dual Circuit chiller only

4. ACZ Single Circuit chiller only

5. AGZ Dual Circuit chiller only

6. AGZ Single Circuit chiller only

7. Solid State Starter option required. Not available on WMC chiller

8. WMC chiller only

9. Event Values are supported by the ConfirmedEventNotification feature. The values shown for each alarm correspond to the instance number of an object in the BACnet Communication Module that displays its present value in this field of the Event Notification message

10. Not available on WMC

11. Solid State Starter option required. Available on WMC.

Fault Alarm Number	Description	Event Values <sup>9</sup>	WSC WDC WPV HSC HDC TSC WMC WCC	AGZ	ACZ	WGZ TGZ	AGS	WGS
104	COMPRESSOR SHUTDOWN - Discharge Temperature Sensor Fault 2	1,2,3,4,9,10	X <sup>10</sup>				X	X
105	COMPRESSOR SHUTDOWN - Discharge Temperature Sensor Fault 3	1,2,9,10					X <sup>2</sup>	
107	COMPRESSOR SHUTDOWN - Discharge Temperature High 1	1,2,3,4,9,10	X				X	X
108	COMPRESSOR SHUTDOWN - Discharge Temperature High 2	1,2,3,4,9,10	X				X	X
109	COMPRESSOR SHUTDOWN - Discharge Temperature High 3	1,2,9,10					X <sup>2</sup>	
111	COMPRESSOR SHUTDOWN - Condenser Entering Water Temperature Sensor Fault	1,2,3,4,9,10				X		X
112	COMPRESSOR SHUTDOWN - Evaporator Water Flow Loss	1,2,3,4,9,10	X	X	X	X	X	X
113	COMPRESSOR SHUTDOWN - Evaporator Leaving Water Temperature Low (Freeze)	1,2,3,4,9,10		X		X	X	X
114	COMPRESSOR SHUTDOWN - Evaporator Pressure Low	1,2,3,4,9,10		X <sup>6</sup>	X <sup>4</sup>			
115	COMPRESSOR SHUTDOWN - Evaporator Pressure Low 1	1,2,3,4,9,10	X	X <sup>5</sup>	X <sup>3</sup>	X	X	X
116	COMPRESSOR SHUTDOWN - Evaporator Pressure Low 2	1,2,3,4,9,10	X	X <sup>5</sup>	X <sup>3</sup>	X	X	X
117	COMPRESSOR SHUTDOWN - Evaporator Pressure Low 3	1,2,9,10					X <sup>2</sup>	
119	COMPRESSOR SHUTDOWN - Evaporator Pressure Sensor Fault	1,2,3,4,9,10		X <sup>6</sup>	X <sup>4</sup>			
120	COMPRESSOR SHUTDOWN - Evaporator Pressure Sensor Fault 1	1,2,3,4,9,10	X <sup>10</sup>	X <sup>5</sup>	X <sup>3</sup>	X	X	X
121	COMPRESSOR SHUTDOWN - Evaporator Pressure Sensor Fault 2	1,2,3,4,9,10	X <sup>10</sup>	X <sup>5</sup>	X <sup>3</sup>	X	X	X
122	COMPRESSOR SHUTDOWN - Evaporator Pressure Sensor Fault 3	1,2,9,10					X <sup>2</sup>	
124	COMPRESSOR SHUTDOWN - Ground Fault Trip 1	1,2,3,4,9,10	X <sup>10</sup>	X <sup>6</sup>		X	X <sup>1</sup>	X
125	COMPRESSOR SHUTDOWN - Ground Fault Trip 2	1,2,3,4,9,10	X <sup>10</sup>	X <sup>6</sup>		X	X <sup>1</sup>	X
126	COMPRESSOR SHUTDOWN - Ground Fault Trip 3	1,2,9,10					X <sup>2</sup>	
128	COMPRESSOR SHUTDOWN - Lift Pressure Low 1	1,2,9,10					X	X
129	COMPRESSOR SHUTDOWN - Lift Pressure Low 2	1,2,9,10					X	X
130	COMPRESSOR SHUTDOWN - Lift Pressure Low 3	1,2,9,10					X <sup>2</sup>	
132	COMPRESSOR SHUTDOWN - Liquid Line Pressure Sensor Fault 1	1,2,9,10					X	
133	COMPRESSOR SHUTDOWN - Liquid Line Pressure Sensor Fault 2	1,2,9,10					X	
134	COMPRESSOR SHUTDOWN - Liquid Line Pressure Sensor Fault 3	1,2,9,10					X <sup>2</sup>	
136	COMPRESSOR SHUTDOWN - Liquid Line Temperature Sensor Fault 1	1,2,9,10					X	
137	COMPRESSOR SHUTDOWN - Liquid Line Temperature Sensor Fault 2	1,2,9,10					X	
138	COMPRESSOR SHUTDOWN - Liquid Line Temperature Sensor Fault 3	1,2,9,10					X <sup>2</sup>	
140	UNIT LOCKOUT - Number of Allowed Re-Starts Exceeded	1,2,9,10	X <sup>8</sup>	X <sup>6</sup>	X <sup>4</sup>			
141	COMPRESSOR LOCKOUT - Number of Allowed Re-Starts Exceeded 1	1,2,3,4,9,10	X <sup>8</sup>	X <sup>5</sup>	X <sup>3</sup>	X	X	X
142	COMPRESSOR LOCKOUT - Number of Allowed Re-Starts Exceeded 2	1,2,3,4,9,10	X <sup>8</sup>	X <sup>5</sup>	X <sup>3</sup>	X	X	X
143	COMPRESSOR LOCKOUT - Number of Allowed Re-Starts Exceeded 3	1,2,9,10					X <sup>2</sup>	
145	COMPRESSOR SHUTDOWN - Evaporator Leaving Water Temperature Sensor Fault	1,2,3,4,9,10	X	X		X	X	X
146	COMPRESSOR SHUTDOWN - Evaporator Leaving Water Temperature Sensor Fault 1	1,2,3,4,9	X					
147	COMPRESSOR SHUTDOWN - Evaporator Leaving Water Temperature Sensor Fault 2	1,2,3,4,9	X					
150	UNIT STOP - Mechanical High Pressure Trip	1,2,9,10		X <sup>6</sup>	X <sup>4</sup>			
151	COMPRESSOR SHUTDOWN - Mechanical High Pressure Trip 1	1,2,3,4,9,10	X	X <sup>5</sup>	X <sup>3</sup>	X	X	X

1. AGS C Vintage chiller only (two circuits only)

2. AGS B Vintage chiller only (up to three circuits)

3. ACZ Dual Circuit chiller only

4. ACZ Single Circuit chiller only

5. AGZ Dual Circuit chiller only

6. AGZ Single Circuit chiller only

7. Solid State Starter option required. Not available on WMC chiller

8. WMC chiller only

9. Event Values are supported by the ConfirmedEventNotification feature. The values shown for each alarm correspond to the instance number of an object in the BACnet Communication Module that displays its present value in this field of the Event Notification message

10. Not available on WMC

11. Solid State Starter option required. Available on WMC.

Fault Alarm Number	Description	Event Values <sup>9</sup>	WSC WDC WPV HSC HDC TSC WMC WCC	AGZ	ACZ	WGZ TGZ	AGS	WGS
152	COMPRESSOR SHUTDOWN - Mechanical High Pressure Trip 2	1,2,3,4,9,10	X	X <sup>5</sup>	X <sup>3</sup>	X	X	X
153	COMPRESSOR SHUTDOWN - Mechanical High Pressure Trip 3	1,2,9,10					X <sup>2</sup>	
155	COMPRESSOR SHUTDOWN - Oil Net Pressure Low 1	1,2,3,4,9	X <sup>10</sup>					
156	COMPRESSOR SHUTDOWN - Oil Net Pressure Low 2	1,2,3,4,9	X <sup>10</sup>					
159	COMPRESSOR SHUTDOWN - Oil Feed Temperature High 1	1,2,3,4,9	X <sup>10</sup>					
160	COMPRESSOR SHUTDOWN - Oil Feed Temperature High 2	1,2,3,4,9	X <sup>10</sup>					
163	COMPRESSOR SHUTDOWN - Oil Feed Temperature Low 1	1,2,3,4,9	X <sup>10</sup>					
164	COMPRESSOR SHUTDOWN - Oil Feed Temperature Low 2	1,2,3,4,9	X <sup>10</sup>					
167	COMPRESSOR SHUTDOWN - Oil Feed Temperature Sensor Fault 1	1,2,3,4,9	X <sup>10</sup>					
168	COMPRESSOR SHUTDOWN - Oil Feed Temperature Sensor Fault 2	1,2,3,4,9	X <sup>10</sup>					
171	COMPRESSOR SHUTDOWN - Oil Level Low 1	1,2,9,10					X	X
172	COMPRESSOR SHUTDOWN - Oil Level Low 2	1,2,9,10					X	X
173	COMPRESSOR SHUTDOWN - Oil Level Low 3	1,2,9,10					X <sup>2</sup>	
175	COMPRESSOR SHUTDOWN - Oil Filter Delta Pressure High 1	1,2,9,10					X	X
176	COMPRESSOR SHUTDOWN - Oil Filter Delta Pressure High 2	1,2,9,10					X	X
177	COMPRESSOR SHUTDOWN - Oil Filter Delta Pressure High 3	1,2,9,10	X <sup>10</sup>				X <sup>2</sup>	
179	COMPRESSOR SHUTDOWN - Oil Feed Pressure Sensor Fault 1	1,2,3,4,9	X <sup>10</sup>					
180	COMPRESSOR SHUTDOWN - Oil Feed Pressure Sensor Fault 2	1,2,3,4,9	X <sup>10</sup>					
183	COMPRESSOR SHUTDOWN - Oil Sump Pressure Sensor Fault 1	1,2,3,4,9	X <sup>10</sup>					
184	COMPRESSOR SHUTDOWN - Oil Sump Pressure Sensor Fault 2	1,2,3,4,9	X <sup>10</sup>					
187	COMPRESSOR SHUTDOWN - Oil Sump Temperature Sensor Fault 1	1,2,3,4,9	X <sup>10</sup>					
188	COMPRESSOR SHUTDOWN - Oil Sump Temperature Sensor Fault 2	1,2,3,4,9	X <sup>10</sup>					
191	SHUTDOWN - Phase Voltage Protection	1,2,3,4,9		X <sup>6</sup>	X <sup>4</sup>			
192	COMPRESSOR SHUTDOWN - Starter Fault Compressor 1	1,2,3,4,9,10	X	X			X	X
193	COMPRESSOR SHUTDOWN - Starter Fault Compressor 2	1,2,3,4,9,10	X	X			X	X
194	COMPRESSOR SHUTDOWN - Starter Fault Compressor 3	1,2,9,10					X <sup>2</sup>	
196	COMPRESSOR SHUTDOWN - No Starter Transition 1	1,2,3,4,9	X				X <sup>1</sup>	
197	COMPRESSOR SHUTDOWN - No Starter Transition 2	1,2,3,4,9	X				X <sup>1</sup>	
200	COMPRESSOR START ABORT - Oil Pressure Low 1	1,2,3,4,9	X <sup>10</sup>					
201	COMPRESSOR START ABORT - Oil Pressure Low 2	1,2,3,4,9	X <sup>10</sup>					
204	COMPRESSOR SHUTDOWN - Subcooling Low 1	1,2,9,10					X	X
205	COMPRESSOR SHUTDOWN - Subcooling Low 2	1,2,9,10					X	X
206	COMPRESSOR SHUTDOWN - Subcooling Low 3	1,2,9,10					X <sup>2</sup>	
208	COMPRESSOR SHUTDOWN - Surge Suction Superheat High-Running 1	1,2,3,4,9	X					
209	COMPRESSOR SHUTDOWN - Surge Suction Superheat High-Running 2	1,2,3,4,9	X					
212	COMPRESSOR SHUTDOWN - Surge Suction Superheat High-Starting 1	1,2,3,4,9	X <sup>10</sup>					
213	COMPRESSOR SHUTDOWN - Surge Suction Superheat High-Starting 2	1,2,3,4,9	X <sup>10</sup>					
216	COMPRESSOR SHUTDOWN - Suction Temperature Sensor Fault 1	1,2,3,4,9,10	X <sup>10</sup>				X	X
217	COMPRESSOR SHUTDOWN - Suction Temperature Sensor Fault 2	1,2,3,4,9,10	X <sup>10</sup>				X	X
218	COMPRESSOR SHUTDOWN - Suction Temperature Sensor Fault 3	1,2,9,10					X <sup>2</sup>	
220	COMPRESSOR START ABORT - Vanes Open OR No Start – Interlock Switch 1	1,2,3,4,9	X					

1. AGS C Vintage chiller only (two circuits only)

2. AGS B Vintage chiller only (up to three circuits)

3. ACZ Dual Circuit chiller only

4. ACZ Single Circuit chiller only

5. AGZ Dual Circuit chiller only

6. AGZ Single Circuit chiller only

7. Solid State Starter option required. Not available on WMC chiller

8. WMC chiller only

9. Event Values are supported by the ConfirmedEventNotification feature. The values shown for each alarm correspond to the instance number of an object in the BACnet Communication Module that displays its present value in this field of the Event Notification message

10. Not available on WMC

11. Solid State Starter option required. Available on WMC.

Fault Alarm Number	Description	Event Values <sup>9</sup>	WSC WDC WPV HSC HDC TSC WMC WCC	AGZ	ACZ	WGZ TGZ	AGS	WGS
221	COMPRESSOR START ABORT - Vanes Open OR No Start – Interlock Switch 2	1,2,3,4,9	X					
224	COMPRESSOR SHUTDOWN - (Check Chiller Display for Cause)	1,2,3,4,9,10	X				X	X
225	C-Stop - General Comp Fault 1	1,2,3,4,9,10	X <sup>8</sup>					
226	C-Stop - General Comp Fault 2	1,2,3,4,9,10	X <sup>8</sup>					
227	C-Stop - Communication Fault 1	1,2,3,4,9,10	X <sup>8</sup>					
228	C-Stop - Communication Fault 2	1,2,3,4,9,10	X <sup>8</sup>					
229	C-Stop - Interlock Fault 1	1,2,3,4,9,10	X <sup>8</sup>					
230	C-Stop - Interlock Fault 2	1,2,3,4,9,10	X <sup>8</sup>					
231	C-Stop - Bearing Fault 1	1,2,3,4,9,10	X <sup>8</sup>					
232	C-Stop - Bearing Fault 2	1,2,3,4,9,10	X <sup>8</sup>					
233	C-Stop - Motor Fault 1	1,2,3,4,9,10	X <sup>8</sup>					
234	C-Stop - Motor Fault 2	1,2,3,4,9,10	X <sup>8</sup>					
235	C-Stop - Drive Fault 1	1,2,3,4,9,10	X <sup>8</sup>					
236	C-Stop - Drive Fault 2	1,2,3,4,9,10	X <sup>8</sup>					
237	C-Stop - Internal Control Err 1	1,2,3,4,9,10	X <sup>8</sup>					
238	C-Stop - Internal Control Err 2	1,2,3,4,9,10	X <sup>8</sup>					
240	U-Stop - Check Valve Fault 1	1,2,3,4,9,10	X <sup>8</sup>					
241	U-Stop - Check Valve Fault 2	1,2,3,4,9,10	X <sup>8</sup>					
242	U-Stop - LB Valve Fault 1	1,2,3,4,9,10	X <sup>8</sup>					
243	U-Stop - LB Valve Fault 2	1,2,3,4,9,10	X <sup>8</sup>					

1. AGS C Vintage chiller only (two circuits only)

2. AGS B Vintage chiller only (up to three circuits)

3. ACZ Dual Circuit chiller only

4. ACZ Single Circuit chiller only

5. AGZ Dual Circuit chiller only

6. AGZ Single Circuit chiller only

7. Solid State Starter option required. Not available on WMC chiller

8. WMC chiller only

9. Event Values are supported by the ConfirmedEventNotification feature. The values shown for each alarm correspond to the instance number of an object in the BACnet Communication Module that displays its present value in this field of the Event Notification message

10. Not available on WMC

11. Solid State Starter option required. Available on WMC.

This section contains the Protocol Implementation Conformance Statement (PICS) for the MicroTech II Chiller Unit Controller of Daikin Applied as required by ANSI/ASHRAE Standard 135-2004, BACnet: A Data Communication Protocol for Building Automation and Control Networks.

## BACnet Protocol Implementation Conformance Statement

Date:	February 2022
Vendor Name:	Daikin Applied
Product Name:	MicroTech II Chiller Unit Controller
Product Model Number:	MTII Chiller UC
Applications Software Version:	2.15.4E
Firmware Revision:	AeBCM-2.0.9-BeBCM-2.0.9
BACnet Protocol Revision:	Version 1 Revision 4

## Product Description

The MicroTech II Chiller Unit Controller with optional BACnet Communication Module is a microprocessor-based controller designed to operate Daikin Applied chillers and be integrated into BACnet building automation systems.

## BACnet Standardized Device Profile

- ☐ BACnet Standardized Device Profile
- ☐ BACnet Operator Workstation (B-OWS)
- ☐ BACnet Building Controller (B-BC)
- ☐ BACnet Advanced Application Specific Controller (B-AAC)
- ☒ BACnet Application Specific Controller (B-ASC)
- ☐ BACnet Smart Sensor (B-SS)
- ☐ BACnet Smart Actuator (B-SA)

## BACnet Interoperability Building Blocks (BIBBs) Supported

BIBB Name	Designation
Data Sharing – ReadProperty – B	DS-RP-B
Data Sharing – ReadPropertyMultiple – B	DS-RPM-B
Data Sharing – WriteProperty – B	DS-WP-B
Data Sharing – WritePropertyMultiple – B	DS-WPM-B
Alarm and Event – Notification Internal – B	AE-N-I-B
Alarm and Event – ACK – B	AE-ACK-B
Alarm and Event – Information – B	AE-INFO-B
Device Management – Dynamic Device Binding – A	DM-DDB-A
Device Management – Dynamic Device Binding – B	DM-DDB-B
Device Management – Dynamic Object Binding – B	DM-DOB-B
Device Management – DeviceCommunicationControl – B	DM-DCC-B
Device Management – TimeSynchronization – B	DM-TS-B
Device Management – UTCTimeSynchronization – B	DM-UTC-B
Device Management – ReinitializeDevice – B	DM-RD-B
Device Management – Restart – B	DM-R-B

## Standard Object Types Supported

Object-Type	Creatable	Deleteable	Optional	Writable	Proprietary
Analog Input	<input type="checkbox"/>	<input type="checkbox"/>	Description Reliability		Read_Only <sup>1</sup>
Analog Output	<input type="checkbox"/>	<input type="checkbox"/>	Description Reliability	Relinquish Default	Read_Only <sup>1</sup>
Binary Input	<input type="checkbox"/>	<input type="checkbox"/>	Description Reliability Inactive_Text Active_Text		Read_Only <sup>1</sup>
Binary Value	<input type="checkbox"/>	<input type="checkbox"/>	Description Reliability Inactive_Text Active_Text Priority Array Relinquish Default Profile_Name	Present Value Relinquish Default	Read_Only <sup>1</sup>
Device	<input type="checkbox"/>	<input type="checkbox"/>	Description Location Local_Time Local_Date UTC_Offset Daylight_Savings_Status	Location	
Multi-state Input	<input type="checkbox"/>	<input type="checkbox"/>	Description Reliability State_Text		Read_Only <sup>1</sup>
Multi-state Output	<input type="checkbox"/>	<input type="checkbox"/>	Description Reliability State_Text	Relinquish Default	Read_Only <sup>1</sup>

1. Read\_Only is a read only proprietary property used to indicate whether the Present\_Value is read-only (0), writeable but not commandable (1) or writeable and commandable (2).

## Data Link Layer Options

- ☒ BACnet IP, (Annex J)
- ☐ BACnet IP, (Annex J), Foreign Device
- ☒ ISO 8802-3, Ethernet (Clause 7)
- ☐ MS/TP master (Clause 9), baud rate(s):  
9600, 19200, 38400 & 76800
- ☐ MS/TP slave (Clause 9), baud rate(s):  
9600, 19200, 38400 & 76800

## Segmentation Capability

- ☐ Segmented requests supported
- ☐ Segmented responses supported

Window Size:

Window Size:

## Device Address Binding

- ☐ Yes    Static Device Binding
- ☒ No

## Networking Options

- ☐ Router, Clause 6  
Routing Configurations:
- ☐ Annex H, BACnet Tunneling Router over IP
- ☐ BACnet/IP Broadcast Management Device (BBMD)

Number of BDT entries

Registrations by Foreign Devices? ☐ Yes  
☐ No

## Character Sets Supported

- ☒ ANSI X3.4
- ☐ IBM®/Microsoft® DBCS
- ☐ ISO 8859-1
- ☐ ISO 10646 (UCS-2)
- ☐ ISO 10646 (UCS-4)
- ☐ JIS C 6226

**NOTE:** Support for multiple character sets does not imply they can be supported simultaneously.

## Non-BACnet Equipment/Network(s) Support

☐ Communication Gateway

Non-BACnet equipment/networks(s):

Use [Table 14](#) to find and access BACnet network parameters via the MicroTech II Chiller Unit Controller. Data points are

listed alphabetically along with the path(s) to the corresponding keypad menu screen.

**Table 14: Chiller Unit Controller Keypad Menu Path**

Data Point	Keypad Menu Path <sup>1</sup>	WSC WDC WPV HSC HDC TSC WMC WCC	AGZ	ACZ	AGS	WGZ TGZ	WGS
Active Setpoint	Menu\Set\Unit SPs (3)	X	X		X	X	X
Actual Capacity	No Keypad Equivalent	X	X		X	X	X
Actual RPM	No Keypad Equivalent	X					
Alarm Digital Output	No Keypad Equivalent	X	X	X	X	X	X
Capacity Limit Output	No Keypad Equivalent	X	X	X	X	X	X
Capacity Limit Setpoint	No Keypad Equivalent	X	X	X	X	X	X
Chiller Enable	Menu\Set\Unit SPs (1)	X	X	X	X	X	X
Chiller Limited	No Keypad Equivalent	X	X	X	X	X	X
Chiller Local/Remote	No Keypad Equivalent	X	X	X	X	X	X
Chiller Location	No Keypad Equivalent	X	X	X	X	X	X
Chiller Mode Output	No Keypad Equivalent	X	X		X	X	X
Chiller Mode Setpoint	Menu\Set\Unit SP (1)	X	X		X	X	X
Chiller ON OFF	Menu\View\Unit\Status	X	X	X	X	X	X
Chiller Power	No Keypad Equivalent	X	X	X	X	X	X
Chiller Status BACnet	No Keypad Equivalent	X	X	X	X	X	X
Chiller Type	No Keypad Equivalent	X	X		X	X	X
Clear Alarm	No Keypad Equivalent	X	X		X	X	X
Compressor 2 Active Capacity Limit	No Keypad Equivalent	X	X	X	X	X	X
Compressor 2 VFD Speed	No Keypad Equivalent	X	X	X	X	X	X
Compressor Current	No Keypad Equivalent	X					X
Compressor Discharge Temperature	Menu\View\Comp (5)	X			X		X
Compressor Percent RLA	No Keypad Equivalent	X					X
Compressor Power	No Keypad Equivalent	X					X
Compressor Run Hours	Menu\View\Compressor	X	X	X	X	X	X
Compressor Select	No Keypad Equivalent	X	X	X	X	X	X
Compressor Starts	Menu\View\Compressor	X	X	X	X	X	X
Compressor Status	No Keypad Equivalent	X					
Compressor Suction Line Temperature	Menu\View\Unit\Refrigerant (2)	X			X	X	X
Compressor Voltage	No Keypad Equivalent	X					X
Condenser Entering Water Temperature	Menu\View\Unit\Water	X				X	X
Condenser Flow Switch Status	No Keypad Equivalent	X				X	X
Condenser Leaving Water Temperature	Menu\View\Unit\Water	X				X	X
Condenser Pump Run Hours	No Keypad Equivalent	X					
Condenser Refrigerant Pressure	Menu\View\Unit\Refrigerant (1)	X	X	X	X	X	X
Condenser Saturated Refrigerant Temperature	Menu\Unit\Refrigerant (1)	X	X	X	X	X	X
Condenser Water Flow Rate	No Keypad Equivalent	X					X
Condenser Water Pump Status	No Keypad Equivalent	X				X	X
Cool Setpoint	Menu\Set\Unit SPs (3)	X	X		X	X	X
Default Values	No Keypad Equivalent	X	X	X	X	X	X
Design RPM	No Keypad Equivalent	X					
Device Object	No Keypad Equivalent	X	X	X	X	X	X

1. Values shown in parenthesis indicate the unit controller keypad/display sub-menu number.

**Table 15: Chiller Unit Controller Keypad Menu Path**

Data Point	Keypad Menu Path <sup>1</sup>	WSC WDC WPV HSC HDC TSC WMC WCC	AGZ	ACZ	AGS	WGZ TGZ	WGS
Evaporator Entering Water Temperature	Menu\View\Unit\Water	X			X	X	X
Evaporator Flow Switch Status	No Keypad Equivalent	X	X	X	X	X	X
Evaporator Leaving Water Temperature for Unit	Menu\View\Unit Water OR Menu\View\Comp (2)	X	X		X	X	X
Evaporator Leaving Water Temperature for Compressor	Menu\View\Comp	X	X		X		
Evaporator Pump Run Hours	No Keypad Equivalent	X					
Evaporator Refrigerant Pressure	Menu\View\Comp (2)	X	X	X	X	X	X
Evaporator Saturated Refrigerant Temperature	Menu\Unit\Refrigerant (1)	X	X	X	X	X	X
Evaporator Water Flow Rate	No Keypad Equivalent	X					X
Evaporator Water Pump Status	No Keypad Equivalent	X	X		X	X	X
Fault Alarms, Analog Input Object	No Keypad Equivalent	X	X	X	X	X	X
Fault Alarms, Multi-state Input Object	No Keypad Equivalent	X	X	X	X	X	X
Heat Recovery Entering Water Temperature	No Keypad Equivalent	X					
Heat Recovery Leaving Water Temperature	No Keypad Equivalent	X					
Heat Setpoint	Menu\Set\Unit SPs (3)	X					
Ice Setpoint	Menu\Set\Unit SPs (3)	X	X		X	X	X
IGV Percentage Open	No Keypad Equivalent	X					
Inverter Temperature	No Keypad Equivalent	X					
Liquid Line Refrigerant Pressure	No Keypad Equivalent				X		
Liquid Line Refrigerant Temperature	Menu\View\Unit\Refrig (2) Liquid Line=	X			X	X	
Maximum RPM	No Keypad Equivalent	X					
Minimum RPM	No Keypad Equivalent	X					
Motor Cavity Temperature	No Keypad Equivalent	X					
Oil Feed Pressure	Menu\View\Comp (3)	X					
Oil Feed Temperature	Menu\View\Comp (4)	X					
Oil Sump Pressure	No Keypad Equivalent	X					
Oil Sump Temperature	Menu\View\Comp (4)	X					
Outdoor Air Temperature	No Keypad Equivalent		X	X	X		
Power Factor	No Keypad Equivalent						
Problem Alarms, Analog Input Object	No Keypad Equivalent	X	X	X	X	X	X
Problem Alarms, Multi-state Input Object	No Keypad Equivalent	X	X	X	X	X	X
Pump Select	No Keypad Equivalent	X					
Run Enabled	Menu	X	X	X	X	X	X
Warning Alarms, Analog Input Object	No Keypad Equivalent	X	X	X	X	X	X
Warning Alarms, Multi-state Input Object	No Keypad Equivalent	X	X	X	X	X	X

1. Values shown in parenthesis indicate the unit controller keypad/display sub-menu number.



### ***Daikin Applied Training and Development***

Now that you have made an investment in modern, efficient Daikin equipment, its care should be a high priority. For training information on all Daikin HVAC products, please visit us at [www.DaikinApplied.com](http://www.DaikinApplied.com) and click on Training, or call 540-248-9646 and ask for the Training Department.

### ***Warranty***

All Daikin equipment is sold pursuant to its standard terms and conditions of sale, including Limited Product Warranty. Consult your local Daikin Applied representative for warranty details. To find your local Daikin Applied representative, go to [www.DaikinApplied.com](http://www.DaikinApplied.com).

### ***Aftermarket Services***

To find your local parts office, visit [www.DaikinApplied.com](http://www.DaikinApplied.com) or call 800-37PARTS (800-377-2787). To find your local service office, visit [www.DaikinApplied.com](http://www.DaikinApplied.com) or call 800-432-1342.

This document contains the most current product information as of this printing. For the most up-to-date product information, please go to [www.DaikinApplied.com](http://www.DaikinApplied.com).

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