

Sales and Engineering Data Sheet

ED 15100-4

Group: **Controls**

Part Number: **ED 15100**

Date: **October 2016**

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 Removed references to outdated software/firmware.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 and noted WMC-only points in data tables. |

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 | 2.00 |

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.

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 | www.ashrae.org |
| Daikin Applied | IM 837 | MicroTech II Chiller Unit Controller BACnet Communication Module-IP or Ethernet | www.DaikinApplied.com |
| Daikin Applied | IMM AGS | MicroTech II Air-Cooled Screw Chiller Installation and Maintenance Manual | www.DaikinApplied.com |
| Daikin Applied | IOMM ACZ/AGZ | MicroTech II Air-Cooled Condensing Unit Installation, Operation, and Maintenance Manual | www.DaikinApplied.com |
| Daikin Applied | IOMM ACZ | MicroTech II Air-Cooled Condensing Unit Installation, Operation, and Maintenance Manual | www.DaikinApplied.com |
| Daikin Applied | IOMM AGZ | MicroTech II Air-Cooled Scroll Chiller Installation, Operation, and Maintenance Manual | www.DaikinApplied.com |
| Daikin Applied | IOMM WGZ | MicroTech II Water-Cooled Scroll Chiller Installation Manual | www.DaikinApplied.com |
| Daikin Applied | IOMM WPV | MicroTech II Centrifugal Chiller Installation, Operation, and Maintenance Manual | www.DaikinApplied.com |
| Daikin Applied | IOMM WSCWDC | MicroTech II Chiller Unit Controller Installation, Operation, and Maintenance Manual | www.DaikinApplied.com |
| Daikin Applied | OM AGS | MicroTech II Air-Cooled Screw Chiller Operating Manual | www.DaikinApplied.com |
| Daikin Applied | OM CentrifMicro II | MicroTech II Unit Controller for Centrifugal Chillers and Templifiers Operating Manual | www.DaikinApplied.com |
| Daikin Applied | OM WGS | MicroTech II Water-Cooled Screw Chiller Operating Manual | www.DaikinApplied.com |
| Daikin Applied | OMM TGZ | MicroTech II Templifier TGZ Heat Recovery Water Heaters Operating Manual | www.DaikinApplied.com |
| Daikin Applied | OM WMC | MicroTech II Magnetic Bearing Compressor Chiller Operating Manual | www.DaikinApplied.com |
| Daikin Applied | IOMM TSC | MicroTech II Templifier Single Compressor Centrifugal Installation, Operation, and Maintenance Manual | www.DaikinApplied.com |

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.)

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).

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).

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).

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

| | |
|--|---|
| Device Properties | |
| BACnet LAN Type | <input checked="" type="radio"/> BACnetIP <input type="radio"/> BACnet Ethernet |
| BACnetIP 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 |
| Alarm Properties | |
| 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 |
| Clock Properties | |
| 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) |
| BBMD Properties | |
| 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 | |
|---------------------------|--|---|---|
| Device | 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 acknowledgment 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. |
| Network Addressing | 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 |
| Alarms | 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 BACnet Alarm Management 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. |
| Clock Parameters | 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 |
| BBMD Parameters | 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).

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 WPV HDC WMC | WDC HSC TSC WCC | AGZ | ACZ | AGS | WGZ TGZ | WGS |
|---|--------------------------|--------------------------|----------------|----------------|-----|------------|-----|
| Active Setpoint | X | | X | | X | X | X |
| Actual Capacity | X | | X | | X | X | X |
| Actual RPM | X ⁵ | | | | | | |
| Alarm Digital Output | X | | X | X | X | X | X |
| Capacity Limit Output | X | | X ¹ | X ¹ | X | X | X |
| Capacity Limit Setpoint | X | | X ¹ | X ¹ | X | X | X |
| Chiller Enable | X | | X | X | X | X | X |
| Chiller Limited | X | | X ¹ | X ¹ | 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 ⁶ | 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 ⁵ | | | | | | |
| Compressor 2 VFD Speed | X ⁵ | | | | | | |
| Compressor Current ² | X | | | | | | X |
| Compressor Discharge Temperature | X | | | | X | | X |
| Compressor Percent RLA | X | | | | | | X |
| Compressor Power ² | 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 ⁵ | | | | | | |
| Compressor Suction Line Temperature | X | | | | X | X | X |
| Compressor Voltage ² | 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 ⁵ | | | | | | |
| 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 |

1. Dual Circuit chillers only
2. Optional Solid State Starter or Magnetic Bearing compressor 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

| Data Point | WSC WPV HDC WMC | WDC HSC TSC WCC | AGZ | ACZ | AGS | WGZ TGZ | WGS |
|---|--------------------------|--------------------------|-----|-----|----------------|------------|-----|
| Evaporator Leaving Water Temperature for Compressor | X | | X | | X | | |
| 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 | | | | | | |
| 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 ⁵ | | | | | | |
| Inverter Temperature | X ⁵ | | | | | | |
| Liquid Line Refrigerant Pressure | | | | | X ⁴ | | |
| Liquid Line Refrigerant Temperature | X | | | | X ⁴ | X | |
| Maximum RPM | X ⁵ | | | | | | |
| Minimum RPM | X ⁵ | | | | | | |
| Motor Cavity Temperature | X ⁵ | | | | | | |
| Oil Feed Pressure ³ | X | | | | | | |
| Oil Feed Temperature ³ | X | | | | | | |
| Oil Sump Pressure ³ | X | | | | | | |
| Oil Sump Temperature ³ | 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 or Magnetic Bearing compressor 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

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 ¹ | 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 | | | | | | |
| Compressor 1 | AI:56 | R | Comp1ActualRPM | I 118 | 0 - 32,678 RPM Default: NA | The actual speed of the compressor. Available on WMC chillers only. |
| 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 - 160% Default: NA | Total kilowatts of all compressors. Applies only to centrifugal chillers. An optional Solid State Starter or Magnetic Bearing compressor is required. |
| Compressor 2 Active Capacity Limit | AI:88 | R | Comp2ActiveCapLimit | A 107 | 0 - 100% Default: NA | The active capacity limit for compressor 2. Available on WMC chillers only. |
| Compressor 2 VFD Speed | AI:80 | R | Comp2Speed | A 99 | 0 - 100% Default: NA | The VFD speed for compressor 2. Available on WMC chillers only. |
| Compressor Current | | | | | | |
| Compressor Select | AI:51 | R | Current | A 26 | 0 - 65,535 Amps Default: NA | The number of amps being drawn from the selected compressor. See Compressor Select for more information. |
| 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 | | | | | | |
| Compressor Select | AI:18 | R | DischargeTemp | A 19 | -459.9° - 621°F -273.3° - 327.2°C Default: NA | The refrigerant temperature of the selected compressor. See Compressor Select for more information. |
| Compressor 2 | AI:72 | | Comp2DischargeTmp | A 91 | | The current compressor refrigerant temperature of compressor 2. Not available on all chiller models. See Compressor Select 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 ¹ | Range/Default (In Units) | Description |
|--------------------------------------|-----------------------|-------------------|-------------------------|-----------------------------|--|--|
| Compressor Percent RLA | | R | | | 0 - 160% Default: NA | The motor current of the selected compressor. See Compressor Select 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 Compressor Select 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 | | |
| Compressor Run Hours | | R | | | 0 - 65,535 hours* Default: NA | The number of hours the selected compressor motor has been running. See Compressor Select 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 Compressor Select 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 Compressor Select for more information. Available on WMC chillers only. |
| 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 Compressor Select for more information. |
| Compressor Select | AI:15 | | SuctionTemp | A 15 | | |
| Compressor 2 | AI:69 | | Comp2SuctTemp | A 88 | | The current suction line refrigerant temperature for compressor 2. Not available on all chiller models. See Compressor Select for more information. |
| 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 Compressor Select 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. |

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 ¹ | Range/Default (In Units) | Description |
|---|-----------------------|-------------------|----------------------|-----------------------------|---|--|
| 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 Pump Select for more information. |
| Pump Select | AI:28 | | CondPumpOperHours | I 48 | | *Note the value returned must be multiplied by 10 to give actual run hours. |
| Pump 2 | AI:90 | | CondPmp2Hrs | I 104 | | The number of hours that the selected condenser pump 2 has been turned on. Not available on all chiller models. |
| 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 Compressor Select for more information. |
| Compressor Select | AI:16 | | CondPressure | A 21 | | The current refrigerant pressure for compressor 2. Not available on all chiller models. |
| 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 Compressor Select for more information. |
| Compressor Select | AI:17 | | CondSatTemp | A 20 | | The current saturated refrigerant temperature in the condenser for compressor 2. Not available on all chiller models. |
| Compressor 2 | AI:73 | | Comp2CondSatTemp | A 92 | | |
| 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 - 32,678 RPM Default: NA | Indicates the Turbocor compressor(s) calculated speed target based on conditions and request demand. Available on WMC chillers only. |
| 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 Compressor Select for more information. Applies to centrifugal chillers only. |
| Compressor Select | AI:23 | | LvgEvapWaterTempComp | A 14 | | The current leaving chilled water temperature of compressor 2. Not available on all chiller models. |
| 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 Pump Select . |
| Pump Select | AI:27 | | EvapPumpOperHours | I 47 | | *Note the value returned must be multiplied by 10 to give actual run hours. |
| Pump 2 | AI:89 | | EvapPmp2Hrs | I 103 | | The number of hours pump 2 has been running. Not available on all chiller models. |
| 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 Compressor Select for more information. |
| Compressor Select | AI:13 | | EvapPressure | A 17 | | The current refrigerant pressure in the evaporator for compressor 2. Not available on all chiller models. |
| 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 Compressor Select for more information. |
| Compressor Select | AI:14 | | EvapSatTemp | A 16 | | The current saturated refrigerant temperature in the evaporator for compressor 2. Not available on all chiller models. |
| 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. |

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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 ¹ | Range/Default (In Units) | Description |
|--|-----------------------|-------------------|---------------------|-----------------------------|---|--|
| 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). Available on WMC chillers only. |
| 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. Available on WMC chillers only. |
| 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 Compressor Select for more information. |
| 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 Compressor Select for more information. |
| Compressor Select | AI:11 | | LiquidLineTemp | A 36 | | |
| Compressor 2 | AI:85 | | Comp2LiqLineTemp | A 104 | | |
| Maximum RPM | | R | | | 0 - 32,678 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. Available on WMC chillers only. |
| Compressor 1 | AI:55 | | Comp1MaxRPM | I 117 | | |
| Compressor 2 | AI:59 | | Comp2MaxRPM | I 121 | | |
| Minimum RPM | | R | | | 0 - 32,678 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. Available on WMC chillers only. |
| 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. Available on WMC chillers only. |
| 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 Compressor Select for more information. |
| Compressor Select | AI:19 | | OilFeedPressure | A 32 | | |
| Compressor 2 | AI:81 | | Comp2OilFeedPress | A 100 | | |
| 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 Compressor Select for more information. |
| Compressor Select | AI:21 | | OilFeedTemp | A 34 | | |
| Compressor 2 | AI:83 | | Comp2OilFeedTemp | A 102 | | |
| 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 Compressor Select for more information. |
| Compressor Select | AI:20 | | OilSumpPressure | A 33 | | |
| Compressor 2 | AI:82 | | Comp2OilFeedPress | A 101 | | |
| 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 Compressor Select for more information. |
| Compressor Select | AI:22 | | OilSumpTemp | A 35 | | |
| Compressor 2 | AI:84 | | Comp2OilSumpTemp | A 103 | | |
| Outdoor Air Temperature | AI:10 | R | OutdoorAirTemp | A 39 | -40° - 244°F -40° - 118°C Default: NA | The current outdoor air temperature. |

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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 ¹ | Range/Default (In Units) | Description |
|-------------------|-----------------------|-------------------|--------------------|-----------------------------|---------------------------|--|
| 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 www.DaikinApplied.com . |
| 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 ¹ | 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 ¹ | 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 = No Flow (Inactive) 1 = Flow (Active) Default: NA | Indicates whether the selected pump has been commanded on or off. See Pump Select . |
| 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 = Pump Commanded Off (Inactive) 1 = Pump Commanded On (Active) Default: NA | Indicates whether the selected pump has been commanded on or off. See Pump Select . |
| 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 Pump Select . |

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 ¹ | Range/Default (In Units) | Description |
|----------------|-----------------------|--------------------|--------------------|-----------------------------|--|---|
| Chiller Enable | BV:41 | W | ChillerEnable | D 1 | 0 = Request Chiller Off (Disable) 1 = Request Chiller On (Enable) Default: 0 = Request Chiller 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 ¹ | 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 ¹ | 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/circuit (No.1, 2, 3, 4, 5 or 6) that is to be interrogated. The unit controller returns the information for the selected compressor/circuit. First select a compressor/circuit, then interrogate the selected compressor/circuit. See Table 2 to determine the network points available for each chiller type.</p> <p>Compressor/circuit values and descriptions are as follows:</p> <p>1 = Comp/Circuit No. 1 2 = Comp/Circuit No. 2 3 = Comp/Circuit No. 3 (Circuit No. 1 on Scroll Chillers and Condensing Units) 4 = Comp/Circuit No. 4 (Circuit No. 2 on Scroll Chillers and Condensing Units) 5 = Comp No. 5 (Circuit No. 1 on Scroll Chillers and Condensing Units) 6 = Comp No. 6 (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"> • Compressor Current • Compressor Discharge Temperature • Compressor Percent RLA • Compressor Power • Compressor Run Hours • Compressor Starts • Compressor Status • Compressor Voltage • Condenser Refrigerant Pressure • Condenser Saturated Refrigerant Temperature • Evaporator Leaving Water Temperature for Compressor • Evaporator Refrigerant Pressure • Evaporator Saturated Refrigerant Temperature • Liquid Line Refrigerant Pressure • Liquid Line Refrigerant Temperature • Oil Feed Pressure • Oil Feed Temperature • Oil Sump Pressure • Oil Sump Temperature |
| 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 Condenser Pump Run Hours and Evaporator Pump Run Hours.</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 ¹ | 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 BACnet Alarm Management 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 BACnet Alarm Management 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"> • Low Evaporator Pressure • High Condenser Pressure (by pressure sensor) • High Condenser Pressure (by pressure switch) • Low Oil Pressure • Freeze Protection • High Motor Temperature <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).

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 Table 11 - Table 13 |
| 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 Table 11 - Table 13 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
- Freeze Protection
- High Motor Temperature

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 ² | WSC 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 ¹ | | | | | |

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 ⁷ | WSC WPV | WDC HSC | HDC TSC | WMC WCC | AGZ | ACZ | WGZ TGZ | AGS | WGS |
|----------------------|--|---------------------------|------------|------------|------------|------------|----------------|----------------|------------|----------------|-----|
| 5 | RESTART DELAYED - Power Loss While Running 1 | 1,2,9,10 | | | | | | | | X | X |
| 6 | RESTART DELAYED - Power Loss While Running 2 | 1,2,9,10 | | | | | | | | X | X |
| 7 | RESTART DELAYED - Power Loss While Running 3 | 1,2,9,10 | | | | | | | | X ² | |
| 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 ⁵ | X ³ | X | X | X |
| 12 | INHIBIT LOAD - Condenser Pressure High 2 | 1,2,9,10 | | | | | X ⁵ | X ³ | X | X | X |
| 13 | INHIBIT LOAD - Condenser Pressure High 3 | 1,2,9,10 | | | | | | | | X ² | |
| 15 | UNLOAD - Condenser Pressure High | 1,2,9,10 | | | | | X | X | | | |
| 16 | UNLOAD - Condenser Pressure High 1 | 1,2,3,4,9,10 | | | | | X ⁵ | X ³ | X | X | X |
| 17 | UNLOAD - Condenser Pressure High 2 | 1,2,3,4,9,10 | | | | | X ⁵ | X ³ | X | X | X |
| 18 | UNLOAD - Condenser Pressure High 3 | 1,2,9,10 | | | | | | | | X ² | |
| 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 ⁶ | X ⁴ | | | |
| 32 | INHIBIT LOAD - Evaporator Pressure Low 1 | 1,2,3,4,9,10 | X | | | | X ⁵ | X ³ | X | X | X |
| 33 | INHIBIT LOAD - Evaporator Pressure Low 2 | 1,2,3,4,9,10 | X | | | | X ⁵ | X ³ | X | X | X |
| 34 | INHIBIT LOAD - Evaporator Pressure Low 3 | 1,2,9,10 | | | | | | | | X ² | |
| 36 | UNLOAD - Evaporator Pressure Low | 1,2,3,4,9,10 | | | | | X ⁶ | X ⁴ | | | |
| 37 | UNLOAD - Evaporator Pressure Low 1 | 1,2,3,4,9,10 | X | | | | X ⁵ | X ³ | X | X | X |
| 38 | UNLOAD - Evaporator Pressure Low 2 | 1,2,3,4,9,10 | X | | | | X ⁵ | X ³ | X | X | X |
| 39 | UNLOAD - Evaporator Pressure Low 3 | 1,2,9,10 | | | | | | | | X ² | |
| 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 ² | |
| 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

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 ⁹ | WSC 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 ² | |
| 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 ⁶ | X ⁴ | | | |
| 66 | COMPRESSOR SHUTDOWN - Motor Protector Trip 1 | 1,2,3,4,9,10 | | X ⁵ | X ³ | X | | |
| 67 | COMPRESSOR SHUTDOWN - Motor Protector Trip 2 | 1,2,3,4,9,10 | | X ⁵ | X ³ | 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 ² | |
| 72 | COMPRESSOR SHUTDOWN - Phase Loss 1 | 1,2,3,4,9,10 | X ⁷ | X ⁵ | X ³ | X | X ¹ | X |
| 73 | COMPRESSOR SHUTDOWN - Phase Loss 2 | 1,2,3,4,9,10 | X ⁷ | X ⁵ | X ³ | X | X ¹ | X |
| 74 | COMPRESSOR SHUTDOWN - Phase Loss 3 | 1,2,9,10 | | | | | X ² | |
| 76 | COMPRESSOR SHUTDOWN - Phase Reversal 1 | 1,2,3,4,9,10 | X ⁷ | | | | X ¹ | X |
| 77 | COMPRESSOR SHUTDOWN - Phase Reversal 2 | 1,2,3,4,9,10 | X ⁷ | | | | X ¹ | X |
| 78 | COMPRESSOR SHUTDOWN - Phase Reversal 3 | 1,2,9,10 | | | | | X ² | |
| 80 | COMPRESSOR SHUTDOWN - Overvoltage 1 | 1,2,3,4,9,10 | X ⁷ | | | | X ¹ | X |
| 81 | COMPRESSOR SHUTDOWN - Overvoltage 2 | 1,2,3,4,9,10 | X ⁷ | | | | X ¹ | X |
| 82 | COMPRESSOR SHUTDOWN - Overvoltage 3 | 1,2,9,10 | | | | | X ² | |
| 84 | COMPRESSOR SHUTDOWN - Undervoltage 1 | 1,2,3,4,9,10 | X ⁷ | | | | X | X |
| 85 | COMPRESSOR SHUTDOWN - Undervoltage 2 | 1,2,3,4,9,10 | X ⁷ | | | | X | X |
| 86 | COMPRESSOR SHUTDOWN - Undervoltage 3 | 1,2,9,10 | | | | | X ² | |
| 88 | COMPRESSOR SHUTDOWN - Condenser Pressure Sensor Fault | 1,2,3,4,9,10 | | X ⁶ | X ⁴ | | | |
| 89 | COMPRESSOR SHUTDOWN - Condenser Pressure Sensor Fault 1 | 1,2,3,4,9,10 | X | X ⁵ | X ³ | X | X | X |
| 90 | COMPRESSOR SHUTDOWN - Condenser Pressure Sensor Fault 2 | 1,2,3,4,9,10 | X | X ⁵ | X ³ | X | X | X |
| 91 | COMPRESSOR SHUTDOWN - Condenser Pressure Sensor Fault 3 | 1,2,9,10 | | | | | X ² | |
| 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 ⁶ | X ⁴ | | | |
| 95 | COMPRESSOR SHUTDOWN - Condenser Pressure High 1 | 1,2,3,4,9,10 | X | X ⁵ | X ³ | X | X | X |
| 96 | COMPRESSOR SHUTDOWN - Condenser Pressure High 2 | 1,2,3,4,9,10 | X | X ⁵ | X ³ | X | X | X |
| 97 | COMPRESSOR SHUTDOWN - Condenser Pressure High 3 | 1,2,9,10 | | | | | X ² | |
| 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 | | | | 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

| Fault Alarm Number | Description | Event Values ⁹ | WSC WPV HDC WMC | WDC HSC TSC WCC | AGZ | ACZ | WGZ TGZ | AGS | WGS |
|--------------------|---|---------------------------|--------------------------|--------------------------|----------------|----------------|----------------|----------------|-----|
| 104 | COMPRESSOR SHUTDOWN - Discharge Temperature Sensor Fault 2 | 1,2,3,4,9,10 | X | | | | | X | X |
| 105 | COMPRESSOR SHUTDOWN - Discharge Temperature Sensor Fault 3 | 1,2,9,10 | | | | | | X ² | |
| 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 ² | |
| 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 | 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 ⁶ | X ⁴ | | | |
| 115 | COMPRESSOR SHUTDOWN - Evaporator Pressure Low 1 | 1,2,3,4,9,10 | X | X ⁵ | X ³ | X | X | X | X |
| 116 | COMPRESSOR SHUTDOWN - Evaporator Pressure Low 2 | 1,2,3,4,9,10 | X | X ⁵ | X ³ | X | X | X | X |
| 117 | COMPRESSOR SHUTDOWN - Evaporator Pressure Low 3 | 1,2,9,10 | | | | | | X ² | |
| 119 | COMPRESSOR SHUTDOWN - Evaporator Pressure Sensor Fault | 1,2,3,4,9,10 | | | X ⁶ | X ⁴ | | | |
| 120 | COMPRESSOR SHUTDOWN - Evaporator Pressure Sensor Fault 1 | 1,2,3,4,9,10 | X | X ⁵ | X ³ | X | X | X | X |
| 121 | COMPRESSOR SHUTDOWN - Evaporator Pressure Sensor Fault 2 | 1,2,3,4,9,10 | X | X ⁵ | X ³ | X | X | X | X |
| 122 | COMPRESSOR SHUTDOWN - Evaporator Pressure Sensor Fault 3 | 1,2,9,10 | | | | | | X ² | |
| 124 | COMPRESSOR SHUTDOWN - Ground Fault Trip 1 | 1,2,3,4,9,10 | X ⁷ | X ⁶ | | X | X ¹ | X | X |
| 125 | COMPRESSOR SHUTDOWN - Ground Fault Trip 2 | 1,2,3,4,9,10 | X ⁷ | X ⁶ | | X | X ¹ | X | X |
| 126 | COMPRESSOR SHUTDOWN - Ground Fault Trip 3 | 1,2,9,10 | | | | | | X ² | |
| 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 ² | |
| 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 ² | |
| 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 ² | |
| 140 | UNIT LOCKOUT - Number of Allowed Re-Starts Exceeded | 1,2,9,10 | | | X ⁶ | X ⁴ | | | |
| 141 | COMPRESSOR LOCKOUT - Number of Allowed Re-Starts Exceeded 1 | 1,2,3,4,9,10 | | | X ⁵ | X ³ | X | X | X |
| 142 | COMPRESSOR LOCKOUT - Number of Allowed Re-Starts Exceeded 2 | 1,2,3,4,9,10 | | | X ⁵ | X ³ | X | X | X |
| 143 | COMPRESSOR LOCKOUT - Number of Allowed Re-Starts Exceeded 3 | 1,2,9,10 | | | | | | X ² | |
| 145 | COMPRESSOR SHUTDOWN - Evaporator Leaving Water Temperature Sensor Fault | 1,2,3,4,9,10 | | | 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 ⁶ | X ⁴ | | | |
| 151 | COMPRESSOR SHUTDOWN - Mechanical High Pressure Trip 1 | 1,2,3,4,9,10 | X | X ⁵ | X ³ | X | X | X | X |
| 152 | COMPRESSOR SHUTDOWN - Mechanical High Pressure Trip 2 | 1,2,3,4,9,10 | X | X ⁵ | X ³ | X | 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

| Fault Alarm Number | Description | Event Values ⁹ | WSC WDC WPV HSC HDC TSC WMC WCC | AGZ | ACZ | WGZ TGZ | AGS | WGS |
|--------------------|--|---------------------------|--|----------------|----------------|------------|----------------|-----|
| 153 | COMPRESSOR SHUTDOWN - Mechanical High Pressure Trip 3 | 1,2,9,10 | | | | | X ² | |
| 155 | COMPRESSOR SHUTDOWN - Oil Net Pressure Low 1 | 1,2,3,4,9 | X | | | | | |
| 156 | COMPRESSOR SHUTDOWN - Oil Net Pressure Low 2 | 1,2,3,4,9 | X | | | | | |
| 159 | COMPRESSOR SHUTDOWN - Oil Feed Temperature High 1 | 1,2,3,4,9 | X | | | | | |
| 160 | COMPRESSOR SHUTDOWN - Oil Feed Temperature High 2 | 1,2,3,4,9 | X | | | | | |
| 163 | COMPRESSOR SHUTDOWN - Oil Feed Temperature Low 1 | 1,2,3,4,9 | X | | | | | |
| 164 | COMPRESSOR SHUTDOWN - Oil Feed Temperature Low 2 | 1,2,3,4,9 | X | | | | | |
| 167 | COMPRESSOR SHUTDOWN - Oil Feed Temperature Sensor Fault 1 | 1,2,3,4,9 | X | | | | | |
| 168 | COMPRESSOR SHUTDOWN - Oil Feed Temperature Sensor Fault 2 | 1,2,3,4,9 | X | | | | | |
| 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 ² | |
| 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 ² | |
| 179 | COMPRESSOR SHUTDOWN - Oil Feed Pressure Sensor Fault 1 | 1,2,3,4,9 | X | | | | | |
| 180 | COMPRESSOR SHUTDOWN - Oil Feed Pressure Sensor Fault 2 | 1,2,3,4,9 | X | | | | | |
| 183 | COMPRESSOR SHUTDOWN - Oil Sump Pressure Sensor Fault 1 | 1,2,3,4,9 | X | | | | | |
| 184 | COMPRESSOR SHUTDOWN - Oil Sump Pressure Sensor Fault 2 | 1,2,3,4,9 | X | | | | | |
| 187 | COMPRESSOR SHUTDOWN - Oil Sump Temperature Sensor Fault 1 | 1,2,3,4,9 | X | | | | | |
| 188 | COMPRESSOR SHUTDOWN - Oil Sump Temperature Sensor Fault 2 | 1,2,3,4,9 | X | | | | | |
| 191 | SHUTDOWN - Phase Voltage Protection | 1,2,3,4,9 | | X ⁶ | X ⁴ | | | |
| 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 ² | |
| 196 | COMPRESSOR SHUTDOWN - No Starter Transition 1 | 1,2,3,4,9 | X | | | | X ¹ | |
| 197 | COMPRESSOR SHUTDOWN - No Starter Transition 2 | 1,2,3,4,9 | X | | | | X ¹ | |
| 200 | COMPRESSOR START ABORT - Oil Pressure Low 1 | 1,2,3,4,9 | X | | | | | |
| 201 | COMPRESSOR START ABORT - Oil Pressure Low 2 | 1,2,3,4,9 | X | | | | | |
| 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 ² | |
| 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 | | | | | |
| 213 | COMPRESSOR SHUTDOWN - Surge Suction Superheat High-Starting 2 | 1,2,3,4,9 | X | | | | | |
| 216 | COMPRESSOR SHUTDOWN - Suction Temperature Sensor Fault 1 | 1,2,3,4,9,10 | X | | | | X | X |
| 217 | COMPRESSOR SHUTDOWN - Suction Temperature Sensor Fault 2 | 1,2,3,4,9,10 | X | | | | X | X |
| 218 | COMPRESSOR SHUTDOWN - Suction Temperature Sensor Fault 3 | 1,2,9,10 | | | | | X ² | |
| 220 | COMPRESSOR START ABORT - Vanes Open OR No Start - Interlock Switch 1 | 1,2,3,4,9 | X | | | | | |
| 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 |

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

| Fault Alarm Number | Description | Event Values ⁹ | WSC WDC WPV HSC HDC TSC WMC WCC | AGZ | ACZ | WGZ TGZ | AGS | WGS |
|--------------------|---------------------------------|---------------------------|--|-----|-----|------------|-----|-----|
| 225 | C-Stop - General Comp Fault 1 | 1,2,3,4,9,10 | X ⁸ | | | | | |
| 226 | C-Stop - General Comp Fault 2 | 1,2,3,4,9,10 | X ⁸ | | | | | |
| 227 | C-Stop - Communication Fault 1 | 1,2,3,4,9,10 | X ⁸ | | | | | |
| 228 | C-Stop - Communication Fault 2 | 1,2,3,4,9,10 | X ⁸ | | | | | |
| 229 | C-Stop - Interlock Fault 1 | 1,2,3,4,9,10 | X ⁸ | | | | | |
| 230 | C-Stop - Interlock Fault 2 | 1,2,3,4,9,10 | X ⁸ | | | | | |
| 231 | C-Stop - Bearing Fault 1 | 1,2,3,4,9,10 | X ⁸ | | | | | |
| 232 | C-Stop - Bearing Fault 2 | 1,2,3,4,9,10 | X ⁸ | | | | | |
| 233 | C-Stop - Motor Fault 1 | 1,2,3,4,9,10 | X ⁸ | | | | | |
| 234 | C-Stop - Motor Fault 2 | 1,2,3,4,9,10 | X ⁸ | | | | | |
| 235 | C-Stop - Drive Fault 1 | 1,2,3,4,9,10 | X ⁸ | | | | | |
| 236 | C-Stop - Drive Fault 2 | 1,2,3,4,9,10 | X ⁸ | | | | | |
| 237 | C-Stop - Internal Control Err 1 | 1,2,3,4,9,10 | X ⁸ | | | | | |
| 238 | C-Stop - Internal Control Err 2 | 1,2,3,4,9,10 | X ⁸ | | | | | |
| 240 | U-Stop - Check Valve Fault 1 | 1,2,3,4,9,10 | X ⁸ | | | | | |
| 241 | U-Stop - Check Valve Fault 2 | 1,2,3,4,9,10 | X ⁸ | | | | | |
| 242 | U-Stop - LB Valve Fault 1 | 1,2,3,4,9,10 | X ⁸ | | | | | |
| 243 | U-Stop - LB Valve Fault 2 | 1,2,3,4,9,10 | X ⁸ | | | | | |

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

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: June 2015
 Vendor Name: Daikin Applied
 Product Name: MicroTech II Chiller Unit Controller
 Product Model Number: MTII Chiller UC
 Applications Software Version: 2.00
 Firmware Revision: AmBCM-16 - BmBCM-485-15g
 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 | Deletable | Optional | Writable | Proprietary |
|--------------------|--------------------------|--------------------------|--|--|------------------------|
| Analog Input | <input type="checkbox"/> | <input type="checkbox"/> | Description Reliability | | Read_Only ¹ |
| Analog Output | <input type="checkbox"/> | <input type="checkbox"/> | Description Reliability | Relinquish Default | Read_Only ¹ |
| Binary Input | <input type="checkbox"/> | <input type="checkbox"/> | Description Reliability Inactive_Text Active_Text | | Read_Only ¹ |
| 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 ¹ |
| 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 ¹ |
| Multi-state Output | <input type="checkbox"/> | <input type="checkbox"/> | Description Reliability State_Text | Relinquish Default | Read_Only ¹ |

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 ¹ | 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 |
| 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 |

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

| Data Point | Keypad Menu Path ¹ | WSC WDC WPV HSC HDC TSC WMC WCC | AGZ | ACZ | AGS | WGZ TGZ | WGS |
|--|--|--|-----|-----|-----|------------|-----|
| 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 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.

Aftermarket Services

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

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