DAIKIN

Sales and Engineering Data Sheet ED 15120-11

Group: **Controls**
Part Number: **ED15120-11**
Date: **October 2023**

MicroTech® Chiller
Unit Controller Protocol Information

BACnet® Networks (MS/TP, IP)
LonWorks® Networks

Models AGZ and AMZ Trailblazer® Air-cooled Scroll Chiller

Models AWS and AWV Pathfinder® Air-cooled Screw Chiller

Model ADS Air-cooled Global Screw Chiller

Model WME, B Vintage Magnitude®
Magnetic Bearing Centrifugal Chillers

Model WWV Navigator® Water-cooled Screw Chiller

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Introduction

This manual provides installation, operation, and maintenance information for Daikin Applied chillers with the MicroTech® controller.

NOTE: Installation and maintenance are to be performed only by licensed, if required by local codes and regulations, or qualified personnel who are familiar with local codes and regulations and are experienced with this type of equipment.

⚠ DANGER

LOCKOUT/TAGOUT all power sources prior to service, pressurizing, de-pressuring, or powering down the unit. Failure to follow this warning exactly can result in serious injury or death. Disconnect electrical power before servicing the equipment. More than one disconnect may be required to denergize the unit. Be sure to read and understand the installation, operation, and service instructions within this manual.

⚠ WARNING

Electric shock hazard. Improper handling of this equipment can cause personal injury or equipment damage. This equipment must be properly grounded. Connections to and service of the MicroTech control panel must be performed only by personnel that are knowledgeable in the operation of the equipment being controlled.

⚠ WARNING

Polyolester Oil, commonly known as POE oil is a synthetic oil used in many refrigeration systems, and may be present in this Daikin Applied product. POE oil, if ever in contact with PVC/CPVC, will coat the inside wall of PVC/CPVC pipe causing environmental stress fractures. Although there is no PVC/CPVC piping in this product, please keep this in mind when selecting piping materials for your application, as system failure and property damage could result. Refer to the pipe manufacturer's recommendations to determine suitable applications of the pipe.

⚠ CAUTION

Static sensitive components. A static discharge while handling electronic circuit boards can cause damage to the components. Discharge any static electrical charge by touching the bare metal inside the control panel before performing any service work. Never unplug any cables, circuit board terminal blocks, or power plugs while power is applied to the panel.

Hazard Identification Information

During all servicing operations, all instructions and recommendations, which appear in the installation and service instructions for the product, as well as on tags and labels fixed to the equipment and components and accompanying parts supplied separately, must be read, understood and followed.

- Apply all standard safety codes and practices.
- Wear safety glasses and gloves.
- Use the proper tools to move heavy objects. Move units carefully and set them down gently.

⚠ DANGER

Danger indicates a hazardous situation, which will result in death or serious injury if not avoided.

⚠ WARNING

Warning indicates a potentially hazardous situations, which can result in property damage, personal injury, or death if not avoided.

⚠ CAUTION

Caution indicates a potentially hazardous situations, which can result in minor injury or equipment damage if not avoided.

NOTICE

Notice indicates practices not related to physical injury.

NOTE: Indicates important details or clarifying statements for information presented.

Revision History

ED15120	November 2009	Preliminary release.
ED15120-1	April 2010	Changes made to support AWS configured with VFDs. Added new points, removed maintenance alarms and Oil Level Low alarm. Added 5 Compressor Shutdown Fault alarms, BAD Current Limit Input Warning alarm and corresponding variable numbers. Added Unload-Compressor Motor Current High and Inhibit Load Compressor Motor Current High Problem alarms. Added the Option Controller Communication Failed Warning.
ED15120-2	October 2010	Changed Compressor Starts (it was incorrectly marked as a read-only point via BACnet). It is read/write through BACnet and read-only through LonWorks. Added AGZ-D model.
ED15120-3	April 2012	Changed Chiller Current LonWorks point from SNVT_amp to SNVT_amp_ac to reflect the software. Added notes that specify that nvoCurrent reflects Compressor Current if configured with a VFD, otherwise it reflects Chiller Current. Updates to branding and associated references. Removed No checkbox in BBMD supported section of PICS.
ED15120-4	April 2013	Updated Ice Setpoint-Network range values for AWS and AGZ-D. Removed Acked_Transitions from the writable column for binary values. Removed reference in Table note 3 that said “A third-party metering device is required to simultaneously read these points.” Not applicable for MicroTech III. Update Clear Alarm description to show the six alarms that cannot be cleared from the network. Previous description was incorrect.
ED15120-5	June 2016	Added AGZ-E, AWV models and Total KW data points; fixed typo in alarm code for Compressor Number, alarm code COMP SHUTDOWN - Low Discharge Superheat Circuit #1 changed from 51751 to 51755. Formatting and Daikin Applied branding updates. Added Appendix B - Unit Controller Keypad Menus. Added Present_Value to AO, BO and MSO and Archive to File object types to PICS; Re-named column to “Writeable.”
ED15120-6	March 2017	Added AMZ chiller model to data tables, Reference Documents, and other associated references.
ED15120-7	July 2017	Added WME Gen 2 chiller model to data tables, Reference Documents, and other associated references.
ED 15120-8	January 2018	Added WWV chiller model
ED 15120-9	May 2020	Addition of Waterside Economizer (Free Cooling) BACnet Objects and BACnet/ LonWorks Alarms
ED 15120-10	April 2022	Update of data table. Alarm additions.
ED 15120-11	August 2023	Addition of MicroTech 4 controller. Update to Compressor Unavailable objects.

Reference Documents

Company	Number	Title	Source
Daikin Applied	IOM 1202	Pathfinder® Model AWS Air Cooled Chiller Installation, Operation, and Maintenance Manual	www.DaikinApplied.com
Daikin Applied	IOM 1242	Pathfinder Model AWV Air Cooled Chiller Installation, Operation, and Maintenance Manual	www.DaikinApplied.com
Daikin Applied	IOM 1206 & IOM 1207	Trailblazer® Model AGZ Air Cooled Chiller Installation, Operation and Maintenance Manual	www.DaikinApplied.com
Daikin Applied	IOM 1243	Trailblazer Model AMZ Air Cooled Chiller Installation, Operation, and Maintenance Manual	www.DaikinApplied.com
Daikin Applied	IOM 1033-6	Magnitude Magnetic Bearing Centrifugal Chillers Model WME, B Vintage Installation, Operation, and Maintenance Manual	www.DaikinApplied.com
Daikin Applied	IOM 1264	Navigator Water-cooled Screw Chiller Model WWV Installation, Operation, and Maintenance Manual	www.DaikinApplied.com
Daikin Applied	ED 15122	MicroTech Chiller Unit Controller Implementation Conformance Statement (PICS)	www.DaikinApplied.com
American Society of Heating, Refrig, 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 966	MicroTech Chiller Unit Controller BACnet® IP Communication Module Installation Manual	www.DaikinApplied.com
Daikin Applied	IM 967	MicroTech Chiller Unit Controller BACnet MS/TP Communication Module Installation Manual	www.DaikinApplied.com
Daikin Applied	IM 968	MicroTech Chiller Unit Controller LonWorks Communication Module Installation Manual	www.DaikinApplied.com
LonMark Interoperability Association	078-0120-01G	LonMark® Layers 1-6 Interoperability Guidelines, Version 3.4	www.lonmark.org
LonMark Interoperability Association	078-0120-01G	LonMark Application Layer Interoperability Guidelines, Version 3.4	www.lonmark.org
LonMark Interoperability Association	8040_10	LonMark Functional Profile: Chiller, Version 1.0	www.lonmark.org
Echelon Corporation	078-0156-01G	LonWorks FTT-10A Free Topology Transceiver Users Guide	www.echelon.com

Limited Warranty

Consult your local Daikin Applied Representative for warranty details. To find your local Daikin Applied Representative, go to www.DaikinApplied.com.

This document contains the necessary information needed to incorporate a Daikin Applied MicroTech III or MicroTech 4 Chiller Unit Controller, subsequently referred to as the Chiller Unit Controller, into a building automation system (BAS). It lists all BACnet properties, LonWorks variables, and corresponding Chiller Unit Controller data points. It also contains the BACnet Protocol Implementation Conformance Statement (PICS). BACnet and LonWorks terms are not defined. Refer to the respective specifications for definitions and details.

Software Revision

The software part number is encoded in the unit controller's memory and is available for display on the keypad/display. The part number is available via BACnet system integration tools.

This document supports the following versions of the standard Chiller Unit Controller application and all subsequent versions until otherwise indicated. However, if your software is of a later version, some of the information in this document may not completely describe your application.

Chiller Model	Application Software Version
Pathfinder Air-cooled Screw, Model AWS	2507500205
Pathfinder VFD Air-cooled Screw, Model AWV	263220303
Trailblazer Air-cooled Scroll, Models AGZ-D, AGZ-E	251699403
Trailblazer Air-cooled Scroll, Model AMZ	263222002
Air-cooled Screw, Model ADS	G00008028-100
Magnitude Magnetic Bearing Centrifugal Chillers Model WME, B Vintage	G78761_102_082
Navigator Water-Cooled Screw Chiller Model WWV;	263224104

You can determine the revision of the application software from the keypad/display. The path from the main menu is Main Menu_About Chiller_App Version=.

Unit Controller Data Points

The Chiller Unit Controller contains data points or unit variables that are accessible from three user interfaces: the unit controller keypad/display, a BACnet network (BACnet IP or MS/TP), or a LonWorks network. Not all points are accessible from each interface. This manual lists all important data points and the corresponding path for each applicable interface. Refer to "Appendix B: Unit Controller Keypad Menus" or the respective chiller operation manual, available on www.DaikinApplied.com, for keypad/display details.

Protocol Definitions

The Chiller Unit Controller can be configured in either an interoperable BACnet or LonWorks network. The unit controller must have the corresponding communication module installed for network integration (see "Reference Documents" for corresponding part numbers). There are three communication modules: BACnet IP, BACnet MS/TP (Master/Slave Token Passing), and LonWorks.

BACnet Protocol

BACnet is a standard communication protocol for Building Automation and Control Networks developed by the American National Standards Institute (ANSI) and American Society of Heating, Refrigeration 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 needed to integrate products manufactured by different vendors and to integrate building services that are now independent.

LonWorks Networks

A control network specification for information exchange built upon the use of the LonTalk® protocol for transmitting data developed by the Echelon® Corporation.

LonTalk Protocol

A protocol developed and owned by the Echelon Corporation. It describes how information should be transmitted between devices on a control network.

LonMark® Certification

LonMark certification is an official acknowledgement by the LonMark Interoperability Association that a product communicates using the LonTalk protocol and transmits and receives data per a standard LonMark functional profile.

The LonWorks Communication Module is LonMark 3.4 certified in accordance with the Chiller Functional Profile, Version 1.0. Refer to www.lonmark.org for details.

Basic Protocol Information

Setting Unit Controller Communication Parameters

There are various parameters involved in setting up the unit controller with the three communication module options (BACnet IP, BACnet MS/TP or LONWORKS). These parameters are set differently depending on which communication module is ordered and shipped with the unit. The table below lists the three possible sets of default parameter settings. Not all the parameters apply to all the module options. The bold parameters can be changed using the keypad display located on the unit controller.

Communication Parameter Settings

Parameter Name	BACnet IP	BACnet MS/TP	LONWORKS
DHCP	**ON**	N/A	N/A
Actual IP Address	DHCP Enabled	N/A	N/A
Actual IP Subnet Mask	DHCP Enabled	N/A	N/A
Actual Gateway Address	DHCP Enabled	N/A	N/A
Given IP Address[1]	127.0.0.1	N/A	N/A
Given IP Subnet Mask[1]	255.255.255.0	N/A	N/A
Given Gateway Address[1]	127.0.0.1	N/A	N/A
UDP Port Number	47808	NA	N/A
MS/TP MAC Address[2]	N/A	18	N/A
MS/TP Baud Rate	N/A	38400	N/A
Device Instance Number	Variable	Variable	N/A
Max APDU Length	1476	480	N/A
Device Object Name	POL908_ FF2BEE[3]	POL904_ AD45EC28[4]	N/A
Receive Heartbeat	N/A	N/A	0 Sec
Max Master	N/A	127	N/A
Max Info Frames	N/A	1	N/A
Term Resistor	N/A	No[5]	N/A

1. These addresses are used if DHCP (Dynamic Host Configuration Property) is set to OFF. For changes to take effect, use the keypad display and set Apply.
2. Changes on the BACnet IP Setup menu to Yes. This causes the power on the chiller unit controller to reset.
3. The MAC Address is set via the keypad/display. Cycle power after configuring for the changes to take effect.
4. The last 6 digits are the last 6 digits of the MAC address. The MAC address is a printed sticker affixed to the BACnet communication module. The last 8 digits are computed from the production number and date code.
5. Term Resistor is only changeable via the keypad/display. This item can be set to Yes for the first and last unit on the MS/TP network. On all other units, this variable should be set to No (default). *It is important to note that this is a software resistor, and resistance is lost when the unit controller is powered off.* For this reason, a physical resistor is recommended.

BACnet Networks

Compatibility

The 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 or the separate PICS document, ED 15122 (www.DaikinApplied.com.)

BACnet Objects

Chiller Unit Controllers incorporate standard BACnet object types (i.e., object types defined in the BACnet Standard) that conform to the BACnet Standard. Each object has properties that control unit variables or data points. Some object types occur more than once in the 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). The Object Name is the name of the object in the device. Object Names must be unique within each BACnet device.

The Object Name, along with the Object Type and Instance Number, are described in the "Comprehensive Data Tables" section. For more information on Object Types, please refer to ASHRAE Standard 135-2004 (www.ashrae.org.)

Chiller Unit Controller Device Object

⚠ 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.

Each BACnet compatible device (i.e. Chiller Unit Controller) can only have a single BACnet Device Object.

Device Object Identifier

The Chiller Unit Controller Device Object Identifier (Device Instance Number) uniquely specifies the unit within the network. The initial device object instance number is calculated depending on the either the production code (IP) or the MAC Address (MS/TP). This number must be unique on the entire BACnet network. The device instance number can be changed via the keypad display. Cycle power on the unit controller for the change to take effect.

Device Object Properties

The Device Object contains other informative properties as shown in Table 1.

Table 1: Chiller Unit Controller Device Object Properties

Property	Identifier	Default Value	Data Type
Object Identifier	75	device	BACnetObjectIdentifier
Object Name	77	POL_908_FF2BEE[1] (variable)	Character String
Object Type	79	8	BACnetObjectType
System Status	112		BACnetDeviceStatus
Vendor Name	121	Daikin Applied	Character String
Vendor Identifier	120	3	Unsigned 16
Model Name	70	AWS, AWV, AGZ, AMZ, ADS, WME, WWV	Character String
Firmware Revision	44	variable	Character String
Application Software Version	12	variable	Character String
Location	58		Character String
Description	28	AWS Screw Chiller (variable)	Character String
Protocol Version	98	1	Unsigned
Protocol Revision	139	4	Unsigned
Protocol Services Supported	97		BACnetServicesSupported
Protocol Object Types Supported[2]	96	AI, AO, AV, BI, BO, BV, Cal, Device, MSI, MSO, NC, Sch, MSV	BACnetObjectTypesSupported
Object List	76		Sequence of BACnetObjectIdentifer
Max APDU Length Accepted	62	1476 (IP) / 480 (MS/TP)	Unsigned 16
Segmentation Supported	107	both	BACnetSegmentation
Max Segments Accepted	167	16	Unsigned
Local Time[3]	57	variable	Time
Local Date[3]	56	variable	Date
UTC Offset	119	-120 (Range: –780 .. 780)	Integer
Daylight Savings Status	24	variable	Boolean
APDU Segment Timeout	10	2000	Unsigned
APDU Timeout	11	3000	Unsigned
Number of APDU Retries	73	3	Unsigned
Device Address Binding	30		Sequence of BACnetAddressBinding
Database Revision	115	1	Unsigned
Active COV Subscriptions	152		List of BACnetCOVSubscriptions

1. For BACnet IP, the last 6 digits are the last 6 digits of the MAC address. The MAC address is printed a sticker affixed to the BACnet communication module. For BACnet MS/TP, the last 8 digit are computed from the production number printed on the bar code label affixed to the side of the BACnet communication module.
2. While the Chiller Unit Controller supports the entire set of object types, not all object types are used. See "BACnet Network Objects" for details.
3. The BACnet communication module and the Chiller Unit Controller both have their own time clocks. The date and time read via BACnet could differ from the date and time in the unit controller the date or time is changed via the keypad display. The two time clocks re-synchronize approximately every 60-68 minutes and after every power cycle of the unit controller or BACnet communication module.

Network Considerations

Access to Properties

Object properties are accessible from the network by specifying the device object identifier, object identifier, and the property identifier. To access a property, you must specify the object identifier including the device object identifier or the object name including the device object name and the property identifier.

BACnet IP Network Addressing

The BACnet/Internet Protocol (BACnet/IP) address of the Chiller Unit Controller in a BACnet/IP network consists of the four-octet Internet Protocol address followed by the two-octet UDP (User Datagram Protocol) port number. The BACnet/IP address is a six-octet value analogous to a MAC address. The IP address portion of the BACnet/IP address must be unique in the BACnet/IP network segment. The default UDP port number in the Chiller Unit Controller is 47808 (BAC0 in hexadecimal).

The device object of the Chiller Unit Controller contains a Given Internet Protocol Subnet Mask (Default is 255.255.255.0) and a default Given IP address of 127.0.0.1. The controller does support DHCP (Dynamic Host Configuration Protocol) IP addressing which is enabled by default.

The keypad/display can be used to configure the BACnet/IP addressing. The keypad displays the current IP address only when the network is connected.

The Chiller Unit Controller can be incorporated into a BACnet/IP network dedicated to BACnet devices only or an Ethernet network shared with BACnet devices and other devices.

Shared Ethernet Networks

Integrating the Chiller Unit Controller into a shared Ethernet LAN requires close cooperation with the network administrator of the shared Ethernet network. First, verify whether DHCP should or should not be enabled. If not, obtain the IP Subnet Mask of the shared network from the network administrator. Then, obtain static IP Addresses for all Chiller Unit Controllers you are integrating into the shared network. Finally, obtain the address of an IP Router to use for sending IP messages to and from the BACnet IP subnets. Once you have these, refer to the "Setting Unit Controller Communication Parameters" section.

Configuring the Unit Controller

The Chiller Unit Controller is ready to operate with the default values of the various parameters set at the factory. Default values may be changed with the unit's keypad or via the network. See the Chiller Unit Controller Operation Manual for unit settings and/or the respective Communication Module Installation Manual for configuring network parameters (www.DaikinApplied.com).

BACnet MS/TP Network Addressing

The BACnet MS/TP device address (Media Access Control [MAC] address) of the Chiller Unit Controller in a BACnet Master Slave/Token Passing (MS/TP) Local Area Network (LAN) is set using the keypad/display. Navigate to the Advanced Menus\MSTP Setup menu to change this value. You must cycle power (turn the unit controller OFF and then on again) in order for the new address to take effect.

The BUS LED is green when the BACnet communication module is communicating with the network and is red when it is not communicating with the network. The default data transmission rate is set to 38,400 bps (baud). This rate can be changed to 9,600, 19,200 or 76,800 with the keypad/display. Refer to the "Setting Unit Controller Communication Parameters" section.

LONWORKS Networks

LONWORKS technology, developed by Echelon Corporation, is the basis for LonMark interoperable systems. This technology is independent of the communications media. The LonMark Interoperable Association has developed standards for interoperable LONWORKS technology systems. In particular, they have published standards for HVAC equipment including the Chiller Functional Profile. This profile specifies a number of mandatory and optional standard network variables and standard configuration parameters. This manual defines the variables and parameters available in the Chiller Unit Controller that are supported by the Chiller Functional Profile.

LONWORKS Variables

Chiller Unit Controllers incorporate LONWORKS network variables to access unit data points. The unit controller uses LONWORKS Standard Network Variable Types (SNVT) from each profile. Some data points can be adjusted (input network variables, nvi) (read/write attributes, e.g., setpoints) from the network and others can only be interrogated (output network variables, nvo) (read only attributes, e.g., status information). Configuration variables (nci) are included with the read/write attributes.

Resource Files

Resource files contain definitions of functional profiles, network variables types, configuration property types, and enumerations. Resource files are required for displaying manufacturer-specific variables that are not included in the standard device profile. The LONWORKS Communication Module uses the McQuayChiller (Scope 5) resource files. Resource files are available on www.DaikinApplied.com and www.lonmark.org.

External Interface File (XIF)

LonMark guidelines specify exact documentation rules so that proprietary software is not required to commission and configure LONWORKS devices. The LONWORKS Communication Module is self-documenting so that a LONWORKS network management tool can obtain the information needed to connect, configure, and manage the device over the network.

An External Interface File (a specially formatted PC text file with an extension .XIF) is also available so that any network tool can design and configure it prior to installation. XIF files are available on www.DaikinApplied.com and www.lonmark.org.

Network Considerations

Network Topology, Addressing, and Commissioning

Chiller Unit Controllers support LonMark standards for network design, wiring, addressing and commissioning.

Refer to the LonMark Application Layer Interoperability Guidelines Version 3.4, LonMark Layers 1-6 Interoperability Guidelines Version 3.4 (www.lonmark.org) and LONWORKS FTT-10A Free Topology Transceiver Users Guide (www.echelon.com).

Configuring the Unit Controller

The Chiller Unit Controller is designed, programmed, and configured in accordance with the LonMark Chiller Functional Profile. The unit is ready to operate with the default values of the various pre-configured parameters. Default values may be changed at the unit controller keypad or via the network. Refer to the applicable chiller Installation, Operation, and Maintenance (IOM) Manual from www.DaikinApplied.com.

Alarms

The Chiller Unit Controller supports individual alarm objects as well as alarm class (i.e. alarm code and alarm index). It also supports intrinsic alarming used in conjunction with certain BACnet applications.

Further information can be found in the "Alarms" section. Also refer to "BACnet Alarms" or "LonWorks Alarms" for complete classification, notification, and clearing details specific to each protocol.

Unit Controller Sequence of Operation

The sequence of operation for a Chiller Unit Controller depends on the chiller model. Refer to the applicable chiller Installation, Operation, and Maintenance (IOM) Manual from www.DaikinApplied.com.

Network Parameters

The following section defines the network parameters, or data points, available to the BAS from the Chiller Unit Controller. Table 2 lists all BACnet objects and LonWorks variables that are supported for each chiller model type. Refer to "Appendix B: Unit Controller Keypad Menus" for parameter locations via the keypad/display.

Additional alarms are supported exclusively for BACnet Intrinsic Alarming. See the BACnet Intrinsic Alarming section for details.

Table 2: Data Points by Chiller Model

Data Point	AWS Application Version 2507500204 or Earlier	AWS Application Version 2507500205 or Later	AGZ-D/AGZ-E	AMZ	ADS	AWV	WME Vintage B	WWV
Active Setpoint	X	X	X	X	X	X	X	X
Actual Capacity	X	X	X	X	X	X	X	X
Alarm Digital Output	X	X	X	X	X	X	X	X
Application Version	X	X	X	X	X	X	X	X
Capacity Limit (LonWorks)	X	X	X	X	X	X	X	X
Active Capacity Limit (Output)	X	X	X	X	X	X	X	X
Capacity Limit Setpoint - Network	X	X	X	X	X	X	X	X
Chiller Capacity Limited	X	X	X	X	X	X	X	X
Chiller Current					X[1]			
Chiller Enable (LonWorks)	X	X	X	X	X	X	X	X
Chiller Enable Output	X	X	X	X	X	X	X	X
Chiller Enable Setpoint	X	X	X	X	X	X	X	X
Chiller Local/Network	X	X	X	X	X	X	X	X
Chiller Location	X	X	X	X	X	X	X	X
Chiller Mode (LonWorks)	X	X	X	X	X	X	X	X
Chiller Mode Output	X	X	X	X	X	X	X	X
Chiller Mode Setpoint - Network	X	X	X	X	X	X	X	X
Chiller Model	X	X	X	X	X	X	X	X
Chiller Network Communication Failure Warning					X			
Chiller On/Off	X	X	X	X	X	X	X	X
Chiller Status	X	X	X	X	X	X	X	X
Circuit Select[3]	X	X	X		X	X		X
Circuit 1 Suction Refrigerant Temperature				X				
Compressor Select			X	X		X	X	X
Compressor Suction Refrigerant Pressure							X	
Comp Shutdown - Refrig Charge					X			
Clear Alarm - Network	X	X	X	X	X	X	X	X
Compressor Controller Communication Failed - Circuit #n[3]	X	X	X		X	X	X	X
Compressor Current	X[2]	X[2]			X[2]	X[2]	X	X
Compressor Discharge Refrigerant Temperature	X	X			X	X	X	X
Compressor Percent RLA	X	X			X	X	X	X
Compressor Power	X	X			X	X	X	X
Compressor Run Hours	X	X	X	X	X	X	X	X
Compressor Starts	X	X	X	X	X	X	X	X
Compressor Suction Refrigerant Temperature	X	X	X	X	X	X	X	X
Compressor Unavailable						X[7]		
Compressor Voltage	X	X			X	X[6]	X	X
Condenser Entering Fluid Temperature							X	X
Condenser Leaving Fluid Temperature							X	X
Condenser Flow Switch Status							X	X
Condenser Fluid Flow Rate							X	
Condenser Pump1 Run Hours							X	X
Condenser Pump2 Run Hours							X	X
Condenser Pump1 Status							X	X
Condenser Pump2 Status							X	X
Condenser Refrigerant Pressure	X	X	X	X	X	X	X	X
Condenser Saturated Refrigerant Temperature	X	X	X	X	X	X	X	X
Cool Setpoint - Network	X	X	X	X	X	X	X	X
Cool Setpoint (LonWorks)	X	X	X	X	X	X	X	X

1. LonWorks option is not available if this point is configured with a VFD.
2. LonWorks option is not available if this point is configured without a VFD.
3. Parameter does not apply to AMZ chillers.
4. Data point only available through BACnet.
5. Unit must have Waterside Economizer option.
6. Data point not available on AWV with Turboscrew compressor.
7. AWV unit controller must have application code 263220112 or newer.

Data Point	AWS Application Version 2507500204 or Earlier	AWS Application Version 2507500205 or Later	AGZ-D/AGZ-E	AMZ	ADS	AWV	WME Vintage B	WWV
Current Alarm Descriptor	X	X	X	X	X	X	X	X
Current Date and Time	X	X	X	X	X	X	X	X
Default Values (LONWORKS)	X	X	X	X	X	X	X	X
Evaporator Entering Fluid Temperature	X	X	X	X	X	X	X	X
Evaporator Flow Switch Status	X	X	X	X	X	X	X	X
Evaporator Fluid Flow Rate							X	
Evaporator Leaving Fluid Temperature	X	X	X	X	X	X	X	X
Evaporator LWT #n	X	X			X			
Evaporator Pump Run Hours	X	X	X	X	X	X	X	X
Evaporator Pump Status	X	X	X	X	X	X	X	X
Evaporator Refrigerant Pressure	X	X	X	X	X	X		X
Evaporator Saturated Refrigerant Temperature	X	X	X	X	X	X		X
EXV Controller Communication Failed - Circuit #n	X	X	X	X	X	X		
Fan Controller Communication Failed	X	X			X	X		
Heat Recovery Entering Fluid Temperature			X					
Heat Recovery Leaving Fluid Temperature			X					
Ice Setpoint - Network	X	X	X	X	X	X		
Ice Setpoint (LONWORKS)	X	X	X	X	X	X		
Comp Shutdown - Refrig Charge					X			
Lift Temperature							X	
Lift Pressure							X	
Liquid Line Refrigerant Temperature							X	X
Low Refrigerant Charge - Circuit #n	X	X	X	X	X	X		
Maximum Send Time (LONWORKS)	X	X	X	X	X	X	X	X
Minimum Send Time (LONWORKS)	X	X	X	X	X	X	X	X
Motor Gap Temperature							X	
Motor Case Temperature							X	
Oil Feed Pressure	X	X			X	X		X
Outdoor Air Temperature	X	X	X	X	X	X		
Pump Select	X	X	X	X	X	X	X	X
Receive Heartbeat (LONWORKS)	X	X	X	X	X	X	X	X
Request (LONWORKS)	X	X	X	X	X	X	X	X
Rotor Pump Temperature							X	
Run Enabled	X	X	X	X	X	X	X	X
Software Identification (Major Version)	X	X	X	X	X	X	X	X
Software Identification (Minor Version)	X	X	X	X	X	X	X	X
Status	X	X	X	X	X	X	X	X
Stator Temperature 1							X	
Stator Temperature 2							X	
Stator Temperature 3							X	
Total Kilowatts	X	X			X	X	X	
Units	X	X	X	X	X	X	X	X
VFD Temp	X	X			X	X		
Waterside Economizer Enable Setpoint[4,5]						X		
Waterside Economizer State[4,5]						X		

1. LONWORKS option is not available if this point is configured with a VFD.
2. LonWorks option is not available if this point is configured without a VFD.
3. Parameter does not apply to AMZ chillers.
4. Data point only available through BACnet.
5. Unit must have Waterside Economizer option.
6. Data point not available on AWV with Turboscrew compressor.
7. AWV unit controller must have application code 263220112 or newer.

Comprehensive Data Tables

BACnet Network Objects

This section describes the data that is available to the BAS via the BACnet network. Each BACnet object may or may not be available on the unit controller keypad/display. If it is available, the keypad/display menu shows one path where the object appears, but note that it may also be available on more than one keypad menu. Table 3 – Table 7 contain the relevant information needed to integrate the Chiller Unit Controller into the BACnet network. The tables are organized by Analog Inputs, Analog Values, Binary Inputs, Binary Values, and Multi-State Values. The parameters are listed alphabetically by point name within each table. Refer to the notes at the end of Table 7 for additional information. See "Appendix B: Unit Controller Keypad Menus" for each chiller model.

Table 3: BACnet Analog Inputs

Point Name	Object Type/ Instance	Read/Write Access[1]	BACnet Object Name	Range/Default (In Units)	Description
Chiller Current					
	AI:6	R	ChillerCurrent	Amp range varies by chiller model Default: NA	The average current of the chiller. Compressor currents may be added together to calculate this value.
Circuit 1 Suction Refrigerant Temperature					
	AI:224	R	C1SuctionTemperature	-40 – 230°F -40 – 110°C Default: NA	The current circuit 1 suction refrigerant temperature.
Compressor Current[2]					
Circuit 1 Compressor 1	AI:9	R	C1Comp1Current	Amp range varies by chiller model Default: NA	The average current of the compressor motor. Multiple analog inputs exist for Compressor Current because of Intrinsic Alarming. Each object generates different alarms for this sensor. However, the Present_Value of each object will be coming from the same physical analog input on each circuit. Therefore, if the Present_Value is needed for Compressor Current, use any one of the analog inputs on the circuit. See BACnet Intrinsic Alarming for more information on which objects generate which alarms for Intrinsic Alarming. Note: Compressor current (along with voltage, power, a*nd percent RLA) is available with an optional VFD package. Contact the chiller technical response at 877-349-7782 for additional information.*
	AI:181		C1Co1CurrentUnl		
	AI:184		C1Co1CurrentHold		
Circuit 1 Compressor 2	AI:10		C1Comp2Current		
Circuit 2 Compressor 1	AI:12		C2Comp1Current		
	AI:182		C2Co1CurrentUnl		
	AI:185		C2Co1CurrentHold		
Circuit 3 Compressor 1	AI:15		C3Comp1Current		
	AI:183		C3Co1CurrentUnl		
	AI:186		C3Co1CurrentHold		
Compressor Discharge Refrigerant Temperature					
Circuit 1 Compressor 1	AI:63	R	C1Comp1DischargeTemp	-40 – 249.8°F -40 – 121°C Default: NA	The current refrigerant temperature discharged from the compressor. BACnet uses a separate object for each compressor/circuit combination.
Circuit 1, Compressor 2	AI:64		C1Comp2DischargeTemp		
Circuit 2 Compressor 1	AI:66		C2Comp1DischargeTemp		
Circuit 3 Compressor 1	AI:69		C3Comp1DischargeTemp		
Circuit 4 Compressor 1	AI:72		C4Comp1DischargeTemp		
Compressor Percent RLA[5]:					
Circuit 1 Compressor 1	AI:217	R	C1Comp1MotorCurrentPercent		The current percent RLA for the compressor motor of the compressor. BACnet uses a separate variable for each compressor.
Circuit 1 Compressor 2	AI:286		C1Comp2MotorCurrentPercent		

1. This column defines whether the Present_Value property of the object is Read Only (R), Read/Write (W), or Commandable (C). Commandable variables are read/write, but they contain a priority array (1-16). Any priority can be written if the Chiller Unit Controller is communicating via BACnet MS/TP or BACnet IP.

2 .Voltage, Power, Current, and Percent RLA are available per compressor with the installation of an optional VFD package on AWS chillers.

3. Data point not available on AWV with Turboscrew compressor.

4. AWV unit controller must have application code 263220112 or newer.

5. Data point only used for WME Vintage B.

Point Name	Object Type/ Instance	Read/Write Access[1]	BACnet Object Name	Range/Default (In Units)	Description
Compressor Power[2]:					
Circuit 1 Compressor 1	AI:45		C1Comp11Kilowatts	0 – 3500 kilowatts Default: NA	The current power of the compressor motor. BACnet uses a separate variable for each compressor.
Circuit 1 Compressor 2	AI:46		C1Comp2Kilowatts		
Circuit 2 Compressor 1	AI:48		C2Comp11Kilowatts		
Circuit 3 Compressor 1	AI:51		C3Comp11Kilowatts		
Compressor Motor Case Temperature					
Circuit 1 Compressor 1 Motor Case Temperature	AI:274	R	C1Comp2MotorGapTemp	-45-212°F -42.8~100.0°C Default: NA	The current motor case temperature for the compressor.
Circuit 1 Compressor 2 Motor Case Temperature	AI:275	R	C1Comp1MotorCaseTemp	-45-212°F -42.8~100.0°C Default: NA	The current motor case temperature for the compressor.
Compressor Motor Gap Temperature					
Circuit 1 Compressor 1 Motor Gap Temperature	AI:268	R	C1Comp1MotorGapTemp	-45-212°F -42.8~100.0°C Default: NA	The current motor gap temperature for the compressor.
Circuit 1 Compressor 2 Motor Gap Temperature	AI:269	R	C1Comp2MotorGapTemp	-45-212°F -42.8~100.0°C Default: NA	The current motor gap temperature for the compressor.
Compressor Rotor					
Circuit 1 Compressor 1 Rotor PumpTemperature	AI:280	R	C1Comp1RotorPumpTemp	-45-212°F -42.8~100.0°C Default: NA	The current rotor pump temperature for the compressor.
Circuit 1 Compressor 2 Rotor PumpTemperature	AI:281	R	C1Comp2RotorPumpTemp	-45-212°F -42.8~100.0°C Default: NA	The current rotor pump temperature for the compressor.
Compressor Stator Temperature					
Circuit 1 Compressor 1 Stator Temperature 1	AI:250	R	C1Comp1StatorTemp1	-58-392°F -50.0~200.0°C Default: NA	The current stator temperature for the compressor.
Circuit 1 Compressor 2 Stator Temperature 1	AI:251	R	C1Comp2StatorTemp1	-58-392°F -50.0~200.0°C Default: NA	The current stator temperature for the compressor.
Circuit 1 Compressor 1 Stator Temperature 2	AI:256	R	C1Comp1StatorTemp2	-58-392°F -50.0~200.0°C Default: NA	The current stator temperature for the compressor.
Circuit 1 Compressor 2 Stator Temperature 2	AI:257	R	C1Comp2StatorTemp2	-58-392°F -50.0~200.0°C Default: NA	The current stator temperature for the compressor.
Circuit 1 Compressor 1 Stator Temperature 3	AI:262	R	C1Comp1StatorTemp3	-58-392°F -50.0~200.0°C Default: NA	The current stator temperature for the compressor.
Circuit 1 Compressor 2 Stator Temperature 3	AI:263	R	C1Comp2StatorTemp3	-58-392°F -50.0~200.0°C Default: NA	The current stator temperature for the compressor.

1. This column defines whether the Present_Value property of the object is Read Only (R), Read/Write (W), or Commandable (C). Commandable variables are read/write, but they contain a priority array (1-16). Any priority can be written if the Chiller Unit Controller is communicating via BACnet MS/TP or BACnet IP.

2 .Voltage, Power, Current, and Percent RLA are available per compressor with the installation of an optional VFD package on AWS chillers.

3. Data point not available on AWV with Turboscrew compressor.

4. AWV unit controller must have application code 263220112 or newer.

5. Data point only used for WME Vintage B.

Point Name	Object Type/ Instance	Read/Write Access[1]	BACnet Object Name	Range/Default (In Units)	Description
Compressor Suction Refrigerant Temperature					
Circuit 1 Compressor 1	AI:105	R	C1Comp1SuctionTemp	-40 – 230°F -40 – 110°C Default: NA	The current refrigerant temperature entering the compressor. BACnet uses a separate read-only object for each compressor/circuit combination.
Circuit 1 Compressor 2	AI:106		C1Comp2SuctionTemp		
Circuit 2 Compressor 1	AI:108		C2Comp1SuctionTemp		
Circuit 3 Compressor 1	AI:111		C3Comp1SuctionTemp		
Circuit 4 Compressor 1	AI:114		C4Comp1SuctionTemp		
Compressor Voltage[2,3]					
Circuit 1 Compressor 1	AI:27	R	C1Comp1Voltage	0 – 15000 VAC Default: NA	The average voltage of the compressor motor. BACnet uses a separate output for each compressor.
Circuit 1 Compressor 2	AI:28		C1Comp2Voltage		
Circuit 2 Compressor 1	AI:30		C2Comp1Voltage		
Circuit 3 Compressor 1	AI:33		C3Comp1Voltage		
Condenser Entering Fluid Temperature					
	AI:3	R	EntCondWaterTemp	-40°–230°F -40°–110°C Default: NA	The current temperature of the water entering the condenser.
Condenser Fluid Flow Rate					
	AI:147	R	CondWaterFlowRate	0-65,535 GPM 0-4134.6 L/S; Default: NA	The rate of water flow through the condenser.
Condenser Leaving Fluid Temperature					
	AI:4	R	LvgCondWaterTemp	-40°–230°F -40°–110°C Default: NA	The current temperature of the water leaving the condenser.
Condenser Refrigerant Pressure					
Condenser 1	AI:99	R	Cond1RefPressure	0 – 410.019 psi (700 psi for R410A) 0 – 4827 kPa (4826 kPa for R410A) Default: NA	The current condenser pressure. BACnet has three objects for each circuit. The Present Value property of each object is the same for each circuit. BACnet Intrinsic Alarming supports the ability for each of the three objects to generate separate alarms. Each object generates different alarms for this sensor. However, the Present_Value of each object comes from the same physical analog input on each circuit. Therefore, if the Present_Value is needed for the Condenser Refrigerant Pressure, use any one of the three analog inputs on the circuit. This data point is also used for Intrinsic Alarming. See BACnet Intrinsic Alarming.
	AI:157		Cond1RefPressureInhLoad		
	AI:161		Cond1RefPressureUnload		
Condenser 2	AI:100		Cond2RefPressure		
	AI:158		Cond2RefPressureInhLoad		
	AI:162		Cond2RefPressureUnload		
Condenser 3	AI:101		Cond3RefPressure		
	AI:159		Cond3RefPressureInhLoad		
	AI:163		Cond3RefPressureUnload		
Condenser 4	AI:102		Cond4RefPressure		
	AI:160		Cond4RefPressureInhLoad		
	AI:164		Cond4RefPressureUnload		
Evaporator Entering Fluid Temperature					
	AI:1	R	EntEvapWaterTemp	-40 – 230°F -40 – 110°C Default: NA	The temperature of the fluid entering the evaporator. This data point is also used for Intrinsic Alarming. See BACnet Intrinsic Alarming.
Evaporator Fluid Flow Rate					
	AI:148	R	EvapWaterFlowRate	0-65,535 GPM 0-4134.6 L/S; Default: NA	The rate of water flow through the evaporator.

1. This column defines whether the Present_Value property of the object is Read Only (R), Read/Write (W), or Commandable (C). Commandable variables are read/write, but they contain a priority array (1-16). Any priority can be written if the Chiller Unit Controller is communicating via BACnet MS/TP or BACnet IP.
2. Voltage, Power, Current, and Percent RLA are available per compressor with the installation of an optional VFD package on AWS chillers.
3. Data point not available on AWV with Turboscrew compressor.
4. AWV unit controller must have application code 263220112 or newer.
5. Data point only used for WME Vintage B.

Point Name	Object Type/ Instance	Read/Write Access[1]	BACnet Object Name	Range/Default (In Units)	Description
Evaporator Leaving Fluid Temperature					
	AI:2	R	LvgEvapWaterTempUnit	-40 – 230°F -40 – 110°C Default: NA	The current temperature of the fluid leaving the evaporator. This data point is also used for Intrinsic Alarming. See BACnet Intrinsic Alarming.
Evaporator Refrigerant Pressure					
Evaporator 1	AI:141	R	C1EvapRefPressure	-349.974 -349.974 psi -2413 - 2413 kPa Default: NA	The current refrigerant pressure in the evaporator. BACnet has four objects for each circuit. The Present Value property of each object is the same for each circuit. BACnet Intrinsic Alarming supports the ability for each of the four objects to generate separate alarms. Each object generates different alarms for this sensor. However, the Present_Value of each object comes from the same physical analog input on each circuit. Therefore, if the Present_Value is needed for the Evaporator Refrigerant Pressure, use any one of the four analog inputs on the circuit.
	AI:153		C1EvapRefPressureUnload		
	AI:169		C1EvapRefPressureStrtFail		
	AI:173		C1EvapRefPressureInhLoad		
Evaporator 2	AI:142		C2EvapRefPressure		
	AI:154		C2EvapRefPressureUnload		
	AI:170		C2EvapRefPressureStrtFail		
	AI:174		C2EvapRefPressureInhLoad		
Evaporator 3	AI:143		C3EvapRefPressure		
	AI:155		C3EvapRefPressureUnload		
	AI:171		C3EvapRefPressureStrtFail		
	AI:175		C3EvapRefPressureInhLoad		
Evaporator 4	AI:144		C4EvapRefPressure		
	AI:156		C4EvapRefPressureUnload		
	AI:172		C4EvapRefPressureStrtFail		
	AI:176		C4EvapRefPressureInhLoad		
Heat Recovery Entering Fluid Temperature					
	AI:177	R	HeatRecEntWaterTemp	-40° – 230°F -40° – 110°C Default: NA	The current heat recovery entering fluid temperature.
Heat Recovery Leaving Fluid Temperature					
	AI:150	R	HeatRecLvgWaterTemp	-40° – 230°F -40° – 110°C Default: NA	The current heat recovery leaving fluid temperature.
Liquid Line Refrigerant Temperature					
	AI:218	R	C1LiqLineRefTemp	-40°–230°F -40°–110°C Default: NA	The current liquid line refrigerant temperature for the circuit.
Oil Feed Pressure					
Circuit 1 Compressor 1	AI:165	R	C1Comp1OilFeedPress	-5.801473 – 17.54946 psi -40 – 121 kPA Default: NA	The current Oil Feed Pressure. There is one BACnet object for each compressor. These objects generate the COMPRESSOR SHUTDOWN - Oil Feed Pressure Sensor Fault Circuit #n Comp #n alarms.
Circuit 2 Compressor 1	AI:166		C2Comp1OilFeedPress		
Circuit 3 Compressor 1	AI:167		C3Comp1OilFeedPress		
Circuit 4 Compressor 1	AI:168		C4Comp1OilFeedPress		

1. This column defines whether the Present_Value property of the object is Read Only (R), Read/Write (W), or Commandable (C). Commandable variables are read/write, but they contain a priority array (1-16). Any priority can be written if the Chiller Unit Controller is communicating via BACnet MS/TP or BACnet IP.

2 .Voltage, Power, Current, and Percent RLA are available per compressor with the installation of an optional VFD package on AWS chillers.

3. Data point not available on AWV with Turboscrew compressor.

4. AWV unit controller must have application code 263220112 or newer.

5. Data point only used for WME Vintage B.

Point Name	Object Type/ Instance	Read/Write Access[1]	BACnet Object Name	Range/Default (In Units)	Description
Outdoor Air Temperature					
	AI:5 AI:149	R	OutdoorAirTemp OutdoorAirTempLow	-40 – 230°F -40 – 110°C Default: NA	The current outdoor air temperature. BACnet uses two Analog Input objects to represent the Outdoor Air Temperature. The Present Value for these objects comes from the same physical analog input to the chiller unit controller. Either one can be used to display the current Outdoor Air Temperature. Each Analog Input generates an alarm that is mapped to a separate notification class object. Analog Input 5 is mapped to Notification Class 1 (Faults) and Analog Input 149 is mapped to Notification Class 2 (Problems). This data point is also used for Intrinsic Alarming. See BACnet Intrinsic Alarming.
Refrigerant Discharge Pressure					
Circuit 1 Compressor 1 Discharge Refrigerant Pressure	AI:81	R	C1Comp1DischRefPressure	-350–350 Psi, -2413 kPa – 2413 kPa Default: NA	The current discharge refrigerant pressure for the compressor.
Circuit 1 Compressor 2 Discharge Refrigerant Pressure	AI:82	R	C1Comp2DischRefPressure	-350–350 Psi, -2413 kPa – 2413 kPa Default: NA	The current discharge refrigerant pressure for the compressor.
Refrigerant Suction Pressure					
Circuit1, Compressor 1 Suction Refrigerant Pressure	AI:123	R	C1Comp1SuctionPressure	-350–350 Psi, -2413 kPa – 2413 kPa Default: NA	The current suction refrigerant pressure for the compressor.
Circuit 1 Compressor 2 Suction Refrigerant Pressure	AI:124	R	C1Comp2SuctionPressure	-350–350 Psi, -2413 kPa – 2413 kPa Default: NA	The current suction refrigerant pressure for the compressor.
Total Kilowatts[2]					
	AI:8*	R	ChillerKilowatts	0 – 3500 kW Default: NA	Indicates the total chiller kilowatts. *Note that this object type/instance number applies only to AWS and ADS chillers. AWV and WME-B chillers use a separate Analog Value for this object. See Table 4, AV:114. Total Kilowatts is not supported by AGZ chillers.
VFD Temp					
Circuit 1 Compressor 1	AI:178	R	C1Co1VfdTemp	14.0 – 302°F -10.0 - 150.0°C Default: NA	Temperature of the compressor VFD heatsink. These objects are used for Intrinsic Alarming, and only apply to units configured for a VFD. There is one parameter for each compressor.
Circuit 2 Compressor 1	AI:179		C2Co1VfdTemp		
Circuit 3 Compressor 1	AI:180		C3Co1VfdTemp		

1. This column defines whether the Present_Value property of the object is Read Only (R), Read/Write (W), or Commandable (C). Commandable variables are read/write, but they contain a priority array (1-16). Any priority can be written if the Chiller Unit Controller is communicating via BACnet MS/TP or BACnet IP.

2 .Voltage, Power, Current, and Percent RLA are available per compressor with the installation of an optional VFD package on AWS chillers.

3. Data point not available on AWV with Turboscrew compressor.

4. AWV unit controller must have application code 263220112 or newer.

5. Data point only used for WME Vintage B.

Table 4: BACnet Analog Values

Point Name	Object Type/ Instance	Read/Write Access[1]	BACnet Object Name	Range/Default (In Units)	Description
Active Capacity Limit Output					
	AV:1	R	ActiveCapacityLimit	0 – 100% Default: NA	Measures of the ratio of operating capacity limit to full capacity expressed as a percentage. This value is the lowest of all limits specified by the operator, analog Demand Limit input, or Network Capacity Limit Setpoint.
Active Setpoint					
	AV:5	R	ActiveLvgWaterTarget	15.08 – 149.9°F -9.4 – 65.5°C Default: NA	The current setpoint used to control the chiller. The setpoint that is used is based on the operating mode (Ice, Cool or Heat) of the chiller and any "LWT reset" functions that are in effect. See Chiller Mode Output and Chiller Mode Setpoint – Network. There are three possible setpoints: Cool Setpoint – Network, Heat Setpoint – Network, and Ice Setpoint – Network.
Actual Capacity					
	AV:2	R	ChillerCapacity	0 – 100% Default: NA	The percent of maximum capacity the chiller is producing under the present operating conditions. At 100%, the chiller may be producing more or less than its nominal rating due to variations in operating conditions.
Alarm Code					
Fault	AV:905		AVFaultAlarmCode		See BACnet Alarm Codes section for additional information. See Fault Alarms for additional information.
Problems	AV:904		AVProblemAlarmCode		See Problem Alarms for additional information.
Warnings	AV:903		AVWarningAlarmCode		See Warning Alarms for additional information.
Alarm Index					
Fault	AV:901		AVFaultAlarm		See BACnet Alarm Indices section for additional information. See BACnet Fault Alarm Index for additional information.
Problems	AV:900		AVProblemAlarm		See BACnet Problem Alarm Index for additional information.
Warnings	AV:902		AVWarningAlarm		See BACnet Warning Alarm Index for additional information.
Capacity Limit Setpoint - Network					
	AV:3	C	NetworkCapacityLimitPct	0 – 100% Default: 100%	Sets the maximum capacity level of the chiller. This level may be adjusted, but not above the factory-specified limit. The unit controller only uses this variable if Chiller Local/Network is set to Network (0). Chiller Local/Network can only be changed using the unit controller keypad display. Note: If a LONWORKS or Modbus module is also i*nstalled along with a BACnet module, BACnet must write at priority 8 or higher. The* LONWORKS *and Modbus modules write to this point at priority 8.*

1. This column defines whether the Present_Value property of the object is Read Only (R), Read/Write (W), or Commandable (C). Commandable variables are read/write, but they contain a priority array (1-16). Any priority can be written if the Chiller Unit Controller is communicating via BACnet MS/TP or BACnet IP.

2 .Voltage, Power, Current, and Percent RLA are available per compressor with the installation of an optional VFD package on AWS chillers.

3. Data point not available on AWV with Turboscrew compressor.

4. AWV unit controller must have application code 263220112 or newer.

5. Data point only used for WME Vintage B.

Point Name	Object Type/ Instance	Read/Write Access[1]	BACnet Object Name	Range/Default (In Units)	Description
Cool Setpoint - Network					
	AV:4	C	NetworkCoolTempSetpoint	24.98 – 60.08°F -3.9 – 15.6°C Default: 43.88°F / 6.6°C	Changes the Cooling setpoint from the network. It sets the temperature of the Leaving Chilled Fluid when the chiller is operating in the Cooling Mode. It cannot be set below the local Cool Setpoint. The unit controller only uses this variable if Chiller Local/Network is set to Network (0). Chiller Local/Network can only be changed using the keypad. The unit controller uses this variable when Chiller Mode Setpoint - Network is set to Cool (3). *Note: If the BACnet module is attached to a unit controller that also has a LONWORKS and/or Modbus module attached, BACnet must write at priority 8 or higher. LONWORKS and Modbus write to this point at priority 8.*
Compressor Lift Pressure					
Circuit 1 Compressor 1 Lift Pressure	AV:121	R	C1Comp1LiftPressure	-350 – 350 Psi, -2413 – 2413 kPa Default: NA	The current lift pressure for the compressor.
Circuit 1 Compressor 2 Lift Pressure	AV:122	R	C1Comp2LiftPressure	-350 – 350 Psi, -2413 – 2413 kPa Default: NA	The current lift pressure for the compressor.
Compressor Lift Temperature					
Circuit 1 Compressor 1 Lift Temperature	AV:115	R	C1Comp1LiftTemp	-45 – 212°F -42.8~100.0°C Default: NA	The current lift temperature for the compressor.
Circuit 1 Compressor 2 Lift Temperature	AV:116	R	C1Comp2LiftTemp	-45 – 212°F -42.8~100.0°C Default: NA	The current lift temperature for the compressor.
Compressor Percent RLA[2]					
Circuit 1 Compressor 1	AV:8		C1Comp1MotorCurrent Percent		The current percent RLA for the compressor motor of the compressor. BACnet uses a separate variable for each compressor.
Circuit 1 Compressor 2	AV:9		C1Comp2MotorCurrent Percent		
Circuit 2 Compressor 1	AV:11		C2Comp1MotorCurrent Percent		
Circuit 3 Compressor 1	AV:14		C3Comp1MotorCurrent Percent		
Compressor Run Hours					
Circuit 1 Compressor 1	AV:74		C1Comp1Hours		The number of hours that the compressor motor has been turned on. BACnet uses a separate read/write object for each compressor/circuit combination.
Circuit 1 Compressor 2	AV:75		C1Comp2Hours		
Circuit 1 Compressor 3	AV:76		C1Comp3Hours		
Circuit 2 Compressor 1	AV:77		C2Comp1Hours		
Circuit 2 Compressor 2	AV:78		C2Comp2Hours		
Circuit 2 Compressor 3	AV:79		C2Comp3Hours		
Circuit 3 Compressor 1	AV:80		C3Comp1Hours		
Circuit 4 Compressor 1	AV:83		C4Comp1Hours		

1. This column defines whether the Present_Value property of the object is Read Only (R), Read/Write (W), or Commandable (C). Commandable variables are read/write, but they contain a priority array (1-16). Any priority can be written if the Chiller Unit Controller is communicating via BACnet MS/TP or BACnet IP.

2 .Voltage, Power, Current, and Percent RLA are available per compressor with the installation of an optional VFD package on AWS chillers.

3. Data point not available on AWV with Turboscrew compressor.

4. AWV unit controller must have application code 263220112 or newer.

5. Data point only used for WME Vintage B.

Point Name	Object Type/ Instance	Read/Write Access[1]	BACnet Object Name	Range/Default (In Units)	Description
Compressor Starts					
Circuit 1 Compressor 1	AV:92		C1Comp1Starts		The number of times the compressor motor has been started. BACnet uses a separate read/write object for each compressor/circuit combination.
Circuit 1 Compressor 2	AV:93		C1Comp2Starts		
Circuit 1 Compressor 3	AV:94		C1Comp3Starts		
Circuit 2 Compressor 1	AV:95		C2Comp1Starts		
Circuit 2 Compressor 2	AV:96		C2Comp2Starts		
Circuit 2 Compressor 3	AV:97		C2Comp3Starts		
Circuit 3 Compressor 1	AV:98		C3Comp1Starts		
Circuit 4 Compressor 1	AV:101		C4Comp1Starts		
Condenser Pump Run Hours					
Condenser Pump 1 Run Hours	AV:110	R	CondPump1RunHours	0 – 999,999 hours Default: NA	The number of hours that the pump motor has been turned on. BACnet uses separate variable for each pump.
Condenser Pump 2 Run Hours	AV:111	R	CondPump2RunHours	0 – 999,999 hours Default: NA	The number of hours that the pump motor has been turned on. BACnet uses separate variable for each pump.
Condenser Saturated Refrigerant Temperature					
Condenser 1	AV:44		Cond1SatRefTemp		The current saturated refrigerant temperature of the condenser. BACnet uses a separate read-only object for each condenser.
Condenser 2	AV:45		Cond2SatRefTemp		
Condenser 3	AV:46		Cond3SatRefTemp		
Condenser 4	AV:47		Cond4SatRefTemp		
Evaporator Saturated Refrigerant Temperature					
Evaporator 1	AV:68		C1EvapSatRefTemp		The current saturated refrigerant temperature of the evaporator. For BACnet, there is a separate output for each condenser.
Evaporator 2	AV:69		C2EvapSatRefTemp		
Evaporator 3	AV:70		C3EvapSatRefTemp		
Evaporator 4	AV:71		C4EvapSatRefTemp		
Evaporator Pump Run Hours					
Pump 1	AV:112		EvapPump1OperHours		The number of hours that the pump motor has been turned on. BACnet uses separate variable for each pump.
Pump 2	AV:113		EvapPump2OperHours		
Ice Setpoint - Network					
	AV:7	C	NetworkIceTempSetpoint	**AWS/AWV/ ADS/WWV:** 17.6 – 39.2°F -8.0 – 4.0°C **AGZ-D/AGZ-E/ AMZ:** 15.08 – 38.12°F -9.4 – 3.4°C **Default:** 24.98°F / 3.9°C	Changes the Ice setpoint from the network. It sets the temperature of the Leaving Chilled Fluid when the chiller is operating in the Ice Mode. The unit controller only uses this variable if Chiller Local/Network is set to Remote (0). Chiller Local/Network can only be changed using the unit controller keypad display. The unit controller uses this variable when Chiller Mode Setpoint - Network is set to Ice. *Note: If the BACnet module is attached to a unit controller that also has a* LONWORKS *and/or Modbus module attached, BACnet must write at priority 8 or higher.* LONWORKS *and Modbus write to this point at priority 8.*
Total Kilowatts[2]					
	AV:114*	R	ChillerKilowatts	0 – 3500 kW Default: NA	Indicates the total chiller kilowatts. *Applies only to AWV and WME chiller models. For AWS and ADS models, refer to AI:8 in Table 3.

1. This column defines whether the Present_Value property of the object is Read Only (R), Read/Write (W), or Commandable (C). Commandable variables are read/write, but they contain a priority array (1-16). Any priority can be written if the Chiller Unit Controller is communicating via BACnet MS/TP or BACnet IP.
2. Voltage, Power, Current, and Percent RLA are available per compressor with the installation of an optional VFD package on AWS chillers.
3. Data point not available on AWV with Turboscrew compressor.
4. AWV unit controller must have application code 263220112 or newer.
5. Data point only used for WME Vintage B.

Table 5: BACnet Binary Inputs

Point Name	Object Type/ Instance	Read/Write Access1	BACnet Object Name	Range/Default (In Units)	Description
Chiller Capacity Limited					
	BI:6	R	ChillerLimited	0 = Not Limited (Inactive) 1 = Limited (Active) Default: NA	Indicates whether conditions may exist that prevent the chiller from reaching full capacity.
Chiller Enable Output					
	BI:7	R	ChillerEnableOutput	0 = Disable (Inactive) 1 = Enable (Active) Default: NA	Indicates if operation of the chiller is disabled or enabled. The chiller is allowed to run if enabled and not allowed to run if disabled.
Chiller Local/Network					
	BI:3	R	ChillerLocalRemote	0 = Network 1 = Local Default: NA	Indicates whether the chiller is in local control or allowed to be controlled remotely over the network. The value can only be changed locally from the unit controller keypad/display. The values from the following variables are ignored in the chiller application if this variable is set to Local (1): • Chiller Enable Setpoint • Chiller Mode Setpoint – Network • Cool Setpoint Network • Ice Setpoint Network • Capacity Limit Setpoint • Clear Alarm Network
Chiller ON/OFF					
	BI:4	R	UnitOnOff	0 = Chiller OFF 1 = Chiller ON Default: NA	The current state of the chiller.
Compressor Unavailable[4]					
Circuit 1, Compressor 1	BI:163	R	C1Cmp1Unavailable	0 = Available 1 = Unavailable	Indicates whether the compressor is Available (0) or Unavailable (1) to operate.
Circuit 2, Compressor 1	BI:165		C2Cmp1Unavailable		
Condenser Flow Switch Status					
	BI:1	R	CondWaterFlowStatus	0 = No Flow (Inactive) 1 = Flow (Active) Default: NA	The status of the fluid flowing through the condenser.
Condenser Pump 1 Status					
	BI:11	R	CondPump1State	0 = Pump OFF Request 1 = Pump ON Request Default: NA	Indicates if the pump has been commanded ON or OFF. BACnet uses separate outputs for each pump.
Condenser Pump 2 Status					
	BI:12	R	CondPump2State	0 = Pump OFF Request 1 = Pump ON Request Default: NA	Indicates if the pump has been commanded ON or OFF. BACnet uses separate outputs for each pump.
Evaporator Flow Switch Status					
	BI:2	R	EvapWaterFlowStatus	0 = No Flow (Inactive) 1 = Flow (Active) Default: NA	The status of the fluid flowing through the evaporator.
Evaporator Pump Status					
Pump 1	BI:8	R	EvapPump1State	0 = Pump OFF Request 1 = Pump ON Request Default: NA	Indicates if the pump has been commanded ON or OFF. BACnet uses separate outputs for each pump.
Pump 2	BI:9		EvapPump2State		
Run Enabled					
	BI:5	R	RunEnabled	0 = OFF (Inactive) 1 = Run Allowed (Active) Default: NA	The running mode of the chiller. Run Enabled indicates that the chiller can start if operating conditions are met.

1. This column defines whether the Present_Value property of the object is Read Only (R), Read/Write (W), or Commandable (C). Commandable variables are read/write, but they contain a priority array (1-16). Any priority can be written if the Chiller Unit Controller is communicating via BACnet MS/TP or BACnet IP.

2 .Voltage, Power, Current, and Percent RLA are available per compressor with the installation of an optional VFD package on AWS chillers.

3. Data point not available on AWV with Turboscrew compressor.

4. AWV unit controller must have application code 263220112 or newer.

5. Data point only used for WME Vintage B.

Table 6: BACnet Binary Values

Point Name	Object Type/ Instance	Read/Write Access1	BACnet Object Name	Range/Default (in Units)	Description
Chiller Enable Setpoint					
	BV:2	C	ChillerEnableStp	0 = Disable (Inactive) 1 = Enable Default: 0 = Disabled	Disables or enables chiller operation over the network. Setting this variable to Enable does not start the chiller. It only allows the chiller to start if other operating conditions are satisfied. The unit controller only uses this variable if Chiller Local/Network is set to Network (0). Chiller Local/ Network can only be changed using the unit controller keypad display.
Clear Alarm - Network					
	BV:8	C	ClearAlarm	0 = Normal 1 = Clear Alarm	Clears all active alarms. Many alarms are automatically clearing alarms. Of the alarms that need to be manually cleared, the alarms listed below cannot be cleared from the network: • COMPRESSOR SHUTDOWN - Evaporator Pressure Low Circuit #n Compressor #n Fault • COMPRESSOR SHUTDOWN - Condenser Pressure High Circuit #n Compressor #n Fault • COMPRESSOR SHUTDOWN - Motor Temperature High Circuit #n Compressor #n Fault • UNIT SHUTDOWN – Evaporator Leaving Water Temp Low (Freeze) • COMPRESSOR SHUTDOWN - Mechanical High Pressure Trip Circuit #n Compressor #n Fault • COMPRESSOR SHUTDOWN - Mechanical Low Pressure Trip Circuit #n Compressor #n Fault

1. This column defines whether the Present_Value property of the object is Read Only (R), Read/Write (W), or Commandable (C). Commandable variables are read/ write, but they contain a priority array (1-16). Any priority can be written if the Chiller Unit Controller is communicating via BACnet MS/TP or BACnet IP.

2 .Voltage, Power, Current, and Percent RLA are available per compressor with the installation of an optional VFD package on AWS chillers.

3. Data point not available on AWV with Turboscrew compressor.

4. AWV unit controller must have application code 263220112 or newer.

5. Data point only used for WME Vintage B.

Table 7: BACnet Multi-State Values

Point Name	Object Type/ Instance	Read/Write Access1	BACnet Object Name	Range/Default (in Units)	Description
Chiller Mode Output					
	MSV:2	R	ActiveMode	1 = Ice 2 = Cool 3 = Heat 4 = Cool/Heat Recovery 5 = Defrost Default: NA	The current operating mode of the chiller.
Chiller Mode Setpoint - Network					
	MSV:3	C	ChillerOperationMode	1 = Ice* 2 = Cool* 3 = Heat 4 = Cool/Heat Recovery 5 = Defrost Default = Cool	Changes the operating mode of the chiller and provides the ability for another node on the network to place a chiller in another mode. The unit controller only uses this variable if Chiller Local/Network is set to Network (0). Chiller Local/Network can only be changed using the keypad. It also only applies when Available Modes is set to Cool/Ice with Glycol. Available Modes can also be found on the keypad. *Chiller models covered by this document only support Ice and Cool modes. If any other mode is written, the chiller will be set to Cool mode.
Chiller Status					
	MSV:1	R	UnitStatus	1 = OFF 2 = Start 3 = Run 4 = Preshutdown 5 = Service Default: Determined by current state of the chiller	The unit status of the chiller.
Units					
	MSV:4	W	Units	1 = Metric 2 = English Default: English (2)	Sets the type of units (English or Metric) sent from the chiller unit controller to the BACnet network. Cycle power to the unit controller for this change to take effect.
Waterside Economizer Enable Setpoint					
	MSV:6	W	WsEconStp	1 = Disable 2 = Enable Default: Disable (1)	Enables Waterside Economizer operation. Setting this variable to Enable allows the chiller to enter Hybrid or Waterside Economizer cooling mode if operating conditions are satisfied for either mode. Otherwise, the unit will operate in Mechanical cooling mode. The unit controller only uses this variable if Chiller Local/Network con only be changed using unitcontroller keypad display. Hybrid and Waterside Economizer modes are only availale on units oredered with optional Waterside Economizer. For more information, see unit installation and Operation Manual.
Waterside Economizer State					
	MSV:5	R	WsEconState	1 = Off 2 = Mech 3 = Hybrid 4 = WsEcon Default: Off (1)	Indicates the current cooling mode of the chiller. Hybrid and Waterside Economizer modes are only available on units ordered with optional Waterside Economizer. For more information, see unit installation and Operation Manual.

1. This column defines whether the Present_Value property of the object is Read Only (R), Read/Write (W), or Commandable (C). Commandable variables are read/write, but they contain a priority array (1-16). Any priority can be written if the Chiller Unit Controller is communicating via BACnet MS/TP or BACnet IP.
2. .Voltage, Power, Current, and Percent RLA are available per compressor with the installation of an optional VFD package on AWS chillers.
3. Data point not available on AWV with Turboscrew compressor.
4. AWV unit controller must have application code 263220112 or newer.
5. Data point only used for WME Vintage B.

LONWORKS Network Variables

This section includes the data that is available to the BAS via the LONWORKS network. Each variable may or may not be available on the unit controller keypad/display. If it is available, the keypad/display menu shows one path where the variable appears, but note that it may also be available on more than one keypad menu. Refer to "Appendix B: Unit Controller Keypad Menus" or the appropriate chiller IOM for keypad menu structure (www.DaikinApplied.com). The following section defines the comprehensive list of LONWORKS variables available from the unit controller to the network. The properties are displayed as Network Output Variables, Network Input Variables, and Network Configuration Parameters as indicated in Table 8 – Table 10. Refer to the notes at the end of Table 10 for additional information.

Network Variable Inputs

TABLE 8: LONWORKS Network Variable Inputs (NVIs)

Point Name	LonWorks Variable (NV Index)	SNVT Type (SNVT Index)	Range/Default (In Units)	Heart-beat	Description
Capacity Limit Setpoint - Network					
	nviCapacityLim	lev_percent (81)	0 – 100% Default: 100%	N	Sets the maximum capacity level of the chiller. This level may be adjusted, but not above the factory-specified limit. The unit controller only uses this variable if Chiller Local/Network is set to Network (0).Chiller Local/Network can only be changed using the unit controller keypad display. If a LonWorks or Modbus module is also installed along with a BACnet module, BACnet must write at priority 8 or higher. The LonWorks and Modbus modules write to this point at priority 8.
Chiller Enable Setpoint					
	nviChillerEnable	switch (95)	0 = Disable (Request Chiller OFF) 1 = Enable (Request Chiller Auto) -1 (0xff) = Invalid Default: 0 (Disabled)	N	Disables or enables chiller operation over the network. Setting this variable to Enable does not start the chiller. It only allows the chiller to start if other operating conditions are satisfied. The unit controller only uses this variable if Chiller Local/Network is set to Network (0). Chiller Local/Network can only be changed using the unit controller keypad display.
Chiller Mode Setpoint - Network					
	nviMode	hvac_mode (108)	1 = HVAC_HEAT 3 = HVAC_COOL* 11 = HVAC_ICE* Default: 3 = HVAC_COOL	N	Sets the mode of operation of the chiller and provides the ability for another node on the network to place a chiller in another mode. The unit controller only uses this variable if Chiller Local/Network is set to Network (0). Chiller Local/Network can only be changed using the keypad. It also only applies when Available Modes is set to Cool/Ice w/Glycol. Available Modes can also be found on the keypad. *Chiller models covered by this document only support Ice and Cool modes. If any other mode is written, the chiller will be set to Cool mode.
Circuit Select					
	nviCircuitSelect	count (8)	1 = Circuit 1 2 = Circuit 2 3 = Circuit 3 4 = Circuit 4 Default: Circuit 1	N	Selects the circuit (#1 - 4) that is interrogated from the unit controller. The unit controller returns the information for the selected compressor/circuit. To configure the desired circuit, first select a compressor and circuit and then interrogate the desired circuit. This variable selects a circuit for the following variables: • Compressor Current • Compressor Discharge Refrigerant Pressure • Compressor Discharge Saturated Refrigerant Temperature • Compressor Discharge Refrigerant Temperature • Compressor Run Hours • Compressor Starts • Compressor Suction Refrigerant Pressure • Compressor Suction Saturated Refrigerant Temperature • Compressor Suction Refrigerant Temperature • Condenser Pressure • Condenser Saturated Refrigerant Pressure • Evaporator Pressure • Evaporator Saturated Refrigerant Temperature

Point Name	LonWorks Variable (NV Index)	SNVT Type (SNVT Index)	Range/Default (In Units)	Heart-beat	Description
Clear Alarm - Network					
	nviClearAlarm	switch (95)	0 = Inactive (No Alarm) 1 = Clear Alarm Default: 0 (Inactive)	N	Clears all active alarms. Many alarms are automatically clearing alarms. Of the alarms that need to be manually cleared, the alarms listed below cannot be cleared from the network: • COMPRESSOR SHUTDOWN - Evaporator Pressure Low Circuit #n Compressor #n Fault • COMPRESSOR SHUTDOWN - Condenser Pressure High Circuit #n Compressor #n Fault • COMPRESSOR SHUTDOWN - Motor Temperature High Circuit #n Compressor #n Fault • UNIT SHUTDOWN – Evaporator Leaving Water Temp Low (Freeze) • COMPRESSOR SHUTDOWN - Mechanical High Pressure Trip Circuit #n Compressor #n Fault • COMPRESSOR SHUTDOWN - Mechanical Low Pressure Trip Circuit #n Compressor #n Fault
Compressor Select					
	nviCompSelect	count (8)	1 = Compressor 1 2 = Compressor 2 3 = Compressor 3 Default: Compressor 1	N	Selects the compressor (1 – 3) that is interrogated from the unit controller. The unit controller returns the information for the selected compressor/circuit. To configure the desired compressor, first select a compressor and circuit and then interrogate the desired compressor. This variable selects a compressor for the following: • Compressor Run Hours • Compressor Starts
Cool Setpoint					
	nviCoolSetpt	temp_p (105)	24.98 – 60.08°F -3.9 – 15.6°C Default: 43.88°F / 6.6°C	N	Provides the Cooling setpoint of the Leaving Chilled Fluid when the chiller is operating in the Cooling Mode. The Cooling mode is the normal mode of chiller operation, unless overridden by using the optional mode variable to change to another mode. It cannot be set below the local Cool Setpoint. The unit controller only uses this variable if Chiller Local/Network is set to Network (0). Chiller Local/Network can only be changed using the keypad. The unit controller uses this variable when Chiller Mode Setpoint - Network is set to Cool (3).
Current Date and Time					
	nviActTime	time_stamp (84)	NA	N	Synchronizes the chiller's internal time clock with the BAS.
Ice Setpoint					
	nviIceSpt	temp_p (105)	AWS/AWV/WWV: 17.6 - 39.2°F -8.0 - 4.0°C AGZ-D/AGZ-E/AMZ: 15.08 - 38.12°F -9.4 - 3.4°C Default: 24.98°F / -3.9°C	N	Provides the Ice setpoint of the Leaving Chilled Fluid when the chiller is operating in the Ice Mode. The unit controller only uses this variable if Chiller Local/Network is set to Remote (0). Chiller Local/Network can only be changed using the unit controller keypad display. The unit controller uses this variable when Chiller Mode Setpoint - Network is set to Ice.
Pump Select					
	nviPumpSelect	switch (95)	0 = Pump 1 1 = Pump 2 Default: 0 (Pump 1)	N	Selects which pump (1 or 2) supplies the data. The unit controller returns the information from the appropriate condenser or evaporator pump. Select the desired pump to interrogate it. See Condenser Pump Run Hours and Evaporator Pump Run Hours points in this table for additional information.
Request					
	nviRequest	obj_request (92)	0 = RQ_NORMAL Enable object and remove override 2 = RQ_UPDATE_STATUS Report object status 5 = RQ_REPORT_MASK Report status bit mask -1(0xFF) = OC_NUL Invalid Value	N	Provides the mechanism to request an operation or a mode for a functional block within a device. A request consists of an object ID (the object_id field) and an object request (the object_request field). The object ID is the functional block index for a functional block on the device. The Node Object functional block is index zero. The remaining functional blocks are numbered sequentially, starting with one. Refer to www.lonmark.org for more information on object request structure and supported functions.

Network Output Variables

TABLE 9: LONWORKS Network Output Variables (NVOs)

Point Name	LONWORKS Variable	SNVT Type (SNVT Index)	Range/Default (in Units)	Heart-beat	Description
Active Capacity Limit (Output)					
	nvoCapacityLim	lev_percent (81)	0 – 100% Default: 100%	N	Measures of the ratio of operating capacity limit to full capacity expressed as a percentage. This value is the lowest of all limits specified by the operator, analog Demand Limit input, or Network Capacity Limit Setpoint.
Active Setpoint					
	nvoActiveSetpt	temp_p (105)	15.08 -149.9°F -9.4 - 65.5°C Default: 44.6	N	The current setpoint used to control the chiller. The setpoint that is used is based on the operating mode (Ice, Cool or Heat) of the chiller and any “LWT reset” functions that are in effect. See Chiller Mode Output and Chiller Mode Setpoint – Network. There are three possible setpoints: Cool Setpoint – Network, Heat Setpoint – Network, and Ice Setpoint – Network.
Actual Capacity					
	nvoActCapacity	lev_percent (81)	0 – 100% Default: NA	N	The percent of maximum capacity the chiller is producing under the present operating conditions. At 100%, the chiller may be producing more or less than its nominal rating due to variations in operating conditions.
Alarm Digital Output					
	nvoChillerstat.in_alarm	chlr_status (127)	0 = No Alarm 1 = In Alarm Default: NA	N	Indicates whether an alarm condition has occurred. This variable must be polled for alarm notification.
Chiller Capacity Limited					
	nvoChillerstat.limited	chlr_status (127)	0 = Not Limited (Inactive) 1 = Limited (Active) Default: NA	N	Indicates whether conditions may exist that prevent the chiller from reaching full capacity.
Chiller Current					
	nvoCurrent	amp_ac (139)	0 – 10,000 amps Default: NA	N	The average current of the chiller. Compressor currents may be added together to calculate this value. Not available if configured with a VFD. nvoCurrent reflects Compressor Current if configured with a VFD, otherwise it reflects Chiller Current.
Chiller Enable Output					
	nvoChillerEnable	switch (95)	0 = Disable (Request Chiller OFF) 1 = Enable (Request Chiller Auto) -1 (0xff) = Invalid Default: 0 = Disable	N	Indicates if operation of the chiller is enabled or disabled. This chiller is allowed to run when enabled, and not allowed to run when disabled.
Chiller Local/Network					
	nvoChillerStat.local	chlr_status (127)	0 = Network 1 = Local Default: NA	N	Indicates whether the chiller is in local control or allowed to be controlled remotely over the network. The value can only be changed locally. This variable is part of Chiller Status. The following values are ignored in the chiller application if this variable is set to Local (1): • Chiller Enable Setpoint • Chiller Mode Setpoint – Network • Cool Setpoint Network • Ice Setpoint Network • Capacity Limit Setpoint • Clear Alarm Network
Chiller Mode Output					
	nvoChillerstat.chlr_op_mode	chlr_status (127)	1 = HVAC_Heat 3 = HVAC_Cool 11 = HVAC_ICE Default: 3 = HVAC_Cool	N	Changes the operating mode of the chiller. The unit controller only uses this variable if Chiller Local/Network is set to Network (0). Chiller Local/Network can only be changed using the keypad. It also only applies when Available Modes is set to Cool/Ice w/Glycol. Available Modes can also be found on the keypad. Chiller models covered by this document only support Ice and Cool modes. If any other mode is written, the chiller will be set to Cool mode. This variable is part of Chiller Status Output. States other than Heat, Cool, and Ice are unused.
Chiller ON/OFF					
	nvoOnOff	switch (95)	0 = Chiller OFF 1 = Chiller ON Default: NA	N	The current state of the chiller. The OFF state is represented by state = FALSE (0) and value = 0. The other discrete states are represented by state = TRUE (1) and value = 100. This variable is part of Chiller Status.

1. Voltage, Power, Current, and Percent RLA are available per compressor with the installation of an optional VFD package on AWS chillers..
2. Data point not available on AWV with Turboscrew compressor.

Point Name	LONWORKS Variable	SNVT Type (SNVT Index)	Range/Default (in Units)	Heart-beat	Description
Chiller Status					
	nvoChillerstat.chlr_ run_mode	chlr_status (127)	Chiller Run Mode (chiller_t) 0 = CHLR_OFF 1 = CHLR_START 2 = CHLR_RUN 3 = CHLR_ PRESHUTDN 4 = CHLR_SERVICE -1 (0xff) = Invalid (NULL) Chiller Operating Mode (hvac_t) 1 = HVAC_HEAT 3 = HVAC_COOL 11 = HVAC_ICE Default: NA	N	The unit status of the chiller. Chiller Status includes the Run Mode. The Run Mode is defined as Off, Start, Run, Pre-shutdown and Service. The Run Mode provides the primary running states of a chiller and the state provides an indicator of other conditions present. Chiller State: Description In_Alarm: 1 = Chiller is in an alarm condition. This condition may also be observed in the Node Object's status. 0 = No alarm condition. Run_Enabled: 1 = Chiller starts if operating conditions are satisfied. 0 = Chiller not permitted to run. Chiller may be in local mode or placed in a disabled condition and can't be run via a remote request. Local: 1 = Chiller has been placed in a locally controlled mode of operation and cannot respond to remote requests. 0 = Chiller is not in local mode and network visible values maybe changed or monitored remotely. Limited: 1 = Chiller conditions may exist that prevents the Chiller from reaching setpoint. 0 = Chiller is not restricted from attempting to reach setpoint. CHW_flow: 1 = Chiller fluid flow is detected. 0 = No chilled fluid flow present. CONDW_flow: 1 =Condenser fluid flow has been detected 0 = No condenser fluid flow is observed.
Compressor Current[1]					
	nvoCurrent	amp_ac (139)	0 – 10,000 amps Default: NA	N	The average current of the compressor motor. The compressor is selected with Circuit Select. nvoCurrent reflects Compressor Current if configured with a VFD, otherwise it reflects Chiller Current. *Note: Compressor current (along with voltage, power, and percent RLA) is available with an optional VFD package. Contact the chiller technical response at 877-349-7782 for additional information.*
Compressor Discharge Refrigerant Temperature					
	nvoCompDisTemp	temp_p (105)	-40 – 249.8°F -40 – 121°C Default: NA	N	The current refrigerant temperature discharged from the compressor. The circuit is selected with Circuit Select.
Compressor Percent RLA[1]					
	nvoCompPercRLA	lev_percent (81)	0 – 110% Default: NA	N	The current percent RLA for the compressor motor of the compressor. See Circuit Select.
Compressor Power[1]					
	nvoKiloWatts	power_kilo (28)	0 – 3,500 kilowatts Default: NA	N	The current power of the compressor motor. The compressor is selected with Circuit Select.
Compressor Run Hours					
	nvoCompHrs	count_f (51)	0 – 999,999 hours Default: NA	N	The number of hours that the compressor motor has been turned ON. The circuit and compressor are selected with Circuit Select and Compressor Select and is read only.
Compressor Starts					
	nvoCompStarts	count (8)	0 – 65,535 Default: NA	N	The number of times the compressor motor has been started. The circuit and compressor are selected with Circuit Select and Compressor Select and is read-only.
Compressor Discharge Refrigerant Pressure					
	nvoCmpDisRefPres	press (30)	-2413 kPa – 2413 kPa; Default: NA	N	The current discharge refrigerant pressure. See Compressor Select.

1. Voltage, Power, Current, and Percent RLA are available per compressor with the installation of an optional VFD package on AWS chillers..
2. Data point not available on AWV with Turboscrew compressor.

Point Name	LONWORKS Variable	SNVT Type (SNVT Index)	Range/Default (in Units)	Heart-beat	Description
Compressor Suction Refrigerant Pressure					
	nvoSuctRefPress	press (30)	-2413 kPa – 2413 kPa; Default: NA	N	The current suction refrigerant pressure. See Compressor Select.
Compressor Suction Refrigerant Temperature					
	nvoSuctionTemp	temp_p (105)	-40 – 230°F -40 – 110°C Default: NA	N	The current refrigerant temperature entering the compressor. See Circuit Select.
Compressor Voltage[1,2]					
	nvoVoltage	Volt_ac (138)	0 – 15,000 volts Default: NA	N	The average voltage of the compressor motor. See Circuit Select.
Condenser Entering Fluid Temperature					
	nvoEntCndWTemp	temp_p (105)	-40° – 230°F -40°–110°C; Default: NA	N	The temperature of the fluid entering the condenser.
Condenser Leaving Fluid Temperature					
	nvoLvgCndWTemp	temp_p (105)	-40° – 230°F -40° – 110°C; Default: NA	N	The temperature of the fluid leaving the condenser.
Condenser Fluid Flow Rate					
	nvoCondFlowRate	flow (15)	0 – 65,535 GPM 0 – 4134.6 L/S; Default: NA	N	The current condenser fluid flow rate.
Condenser Pump Run Hours					
	nvoCondPumpHrs	count_f (51)	0 – 999,999; Default: NA	N	The number of hours that the pump motor has been turned ON. See Pump Select.
Condenser Pump Status					
	nvoCndWPump	switch (95)	0 = Pump OFF Request 1 = Pump ON Request Default: NA	N	Indicates if the pump has been commanded ON or OFF. See Pump Select.
Condenser Refrigerant Pressure					
	nvoCondRefPres	press (30)	0 – 410.019 psi 700 psi for R410A 0 – 2827 kPa 0 – 4826 kPa for R410A Default: NA	N	The current condenser pressure. See Circuit Select. *Note: The units for SNVT_press#US is inches of water column. To display units in psi the format must be changed to SNVT_ press#US_psi.*
Condenser Saturated Refrigerant Temperature					
	nvoCondSatRefTmp	temp_p (105)	-14.98 – 185°F -26.1 – 85°C Default: NA	N	The current saturated refrigerant temperature of the condenser. See Circuit Select.
Current Alarm Descriptor					
	nvoAlarmDescr	str_asc (36)	0 – 30 characters plus a NUL terminator Default: NA	N	The current alarm in the chiller. The type of alarm is included in the text string. This variable can accommodate 15 simultaneous alarms. Alarm messages are sent sequentially once every 10 seconds.
Evaporator Entering Fluid Temperature					
	nvoEntChWTemp	temp_p (105)	-40 – 230°F -40 – 110°C Default: NA	N	The temperature of the fluid entering the evaporator.
Evaporator Flow Switch Status					
	nvoChillerstat	chlr_status (127)	0 = No Flow (Inactive) 1 = Flow (Active) Default: NA	N	The status of the fluid flowing through the evaporator.
Evaporator Fluid Flow Rate					
	nvoEvapFlowRate	flow (15)	0 – 65,535 GPM 0 – 4134.6 L/S; Default: NA	N	The current evaporator fluid flow rate.

1. Voltage, Power, Current, and Percent RLA are available per compressor with the installation of an optional VFD package on AWS chillers..
2. Data point not available on AWV with Turboscrew compressor.

Point Name	LONWORKS Variable	SNVT Type (SNVT Index)	Range/Default (in Units)	Heart-beat	Description
Evaporator Leaving Fluid Temperature					
	nvoLvgChWTemp	temp_p (105)	-40 – 230°F -40 – 110°C Default: NA	N	The current temperature of the fluid leaving the evaporator.
Evaporator Pump Run Hours					
	nvoEvapPumpHrs	count_f (51)	0 – 999,999 hours Default: NA	N	The number of hours that the pump motor has been turned on. See Pump Select.
Evaporator Pump Status					
	nvoChWPump	switch (95)	0 = Pump OFF Request 1 = Pump ON Request Default: NA	N	Indicates if the pump has been commanded ON or OFF. See Pump Select.
Evaporator Refrigerant Pressure					
	nvoEvapRefPress	press (30)	-349.974 – 349.974 psi -2413 kPa – 2413 kPa Default: NA	N	The current refrigerant pressure in the evaporator. See Circuit Select. *Note: The units for SNVT_press#US is inches of water column. To display units in psi the format must be changed to SNVT_press#US_psi.*
Evaporator Saturated Refrigerant Temperature					
	nvoEvapSatRefTmp	temp_p (105)	-14.98 – 185°F -26.1 – 85°C Default: NA	N	The current saturated refrigerant temperature of the evaporator. See Circuit Select.
Outdoor Air Temperature					
	nvoOutdoorTemp	temp_p (105)	-40 – 230°F -40 – 110°C Default: NA	N	The current outdoor air temperature.
Run Enabled					
	nvoChillerStat.Run_Enabled	chlr_status (127)	0 = OFF (Inactive) 1 = Run Allowed (Active) Default: NA	N	The running mode of the chiller. It indicates that the chiller can start if operating conditions are met. See Chiller Status.
Total Kilowatts[1]					
	nvoTotalKW	power_kilo (28)	0 – 3500 kW Default: NA	N	Indicates the total chiller kilowatts.
Status					
	nvoStatus	obj_status (93)	object_id = 0 – 65,535 invalid_id = 0, 1 invalid_request = 0, 1 report_mask = 0, 1 Default: NA	N	Reports the status for any functional block on a device. It is also used to report the status of the entire device and all functional blocks on the device. A status update consists of an object ID (the object_id field) and multiple status fields. The object ID is the functional block index as described under nviRequest. If the object ID is zero, the status of the device itself and all functional blocks on the device is reported. The status fields are one-bit bitfields. The only supported status fields are the report_mask, invalid_id, and invalid_request fields; all other status fields are not supported. Refer to www.lonmark.org for the complete SNVT type description.

1. Voltage, Power, Current, and Percent RLA are available per compressor with the installation of an optional VFD package on AWS chillers..
2. Data point not available on AWV with Turboscrew compressor.

Network Configuration Inputs

TABLE 10: LONWORKS NETWORK CONFIGURATION INPUTS (NCIS)

Point Name	LonWorks Variable	SNVT/SCPT Type (Index)	Range/Default (In Units)	Heart-beat	Description
Capacity Limit					
	nciCapacityLim	SNVT_lev_percent (81) SCPTlimitChlrCap (81)	0 – 100% Default: 100%	Y	Measures of the ratio of operating capacity to full capacity expressed in percent. Sets a default value for the capacity limit of the chiller (nviCapacityLim), unlessnciDefaults = 1. If nciDefaults = 1, nviCapacityLim remains the last valid value after power is restored. The capacity limit value is not the nominal capacity limit of the chiller. Refer to the appropriate Operating Manual for suitable variable values. The chiller object uses nciCapacityLim on power-up or loss of communication unless nciDefaults = 1. Loss of communications is determined by Receive Heartbeat (nciRCvHrtBt). If Receive Heartbeat is greater than zero, then communication is considered lost when nviCapacityLim is not written to again before the Receive Heartbeat timer expires. Each time nviCapacityLim is written, the Receive Heartbeat timer is reset. If Receive Heartbeat is set to 0, then this function is disabled and communication loss is never detected.
Chiller Enable					
	nciChillerEnable	SNVT_switch (95) SCPT_pwrUpState (73)	0 = Request Chiller OFF 1 = Request Chiller Auto (run) -1 (0xff) =Invalid Default: 0 (Chiller OFF)	Y	Sets the default power-up and restart mode of the chiller (nviChillerEnable), unless nciDefaults = 1. If nciDefaults = 1, nviChillerEnable will retain the last valid value when power is restored. Refer to the unit controller Operating Manual for variable values. The chiller object uses nciChillerEnable on power-up or loss of communication unless nciDefaults =1. Loss of communications is determined by Receive Heartbeat (nciRCvHrtBt). If Receive Heartbeat is greater than zero, then communication is considered lost if nviMode is not written to again before the Receive Heartbeat timer expires. Each time nviMode is written, the Receive Heartbeat timer is reset. If Receive Heartbeat is set to 0, then this function is disabled and communication loss is never detected.
Chiller Mode					
	nciMode	SNVT_hvac_mode (108) SCPT_HVACmode (74)	1 = HVAC_HEAT 3 = HVAC_COOL* 11 = HVAC_ICE* Default: 3 = HVAC_COOL	Y	Establishes the default operating mode of the chiller, unless nciDefaults = 1. If nciDefaults = 1, the last valid value is used. Chiller Mode Setpoint – Network (nviMode) is set equal to nciMode on power-up or loss of communication unless nciDefaults =1. Loss of communication is determined by Receive Heartbeat (nciRCvHrtBt). If Receive Heartbeat is greater than zero, then communications is considered lost when the nviChillerEnable is not written to again before the Receive Heartbeat timer expires. Each time nviChillerEnable is written, the Receive Heartbeat timer is reset. If Receive Heartbeat is set to 0, then this function is disabled and communication loss is never detected.Writing a value other than those shown in the Range column will result in HVAC_COOL (3) being written. *Chiller models covered by this document only support Ice and Cool modes. If any other mode is written, the chiller will be set to Cool mode.
Cool Setpoint					
	nciCoolSetpt	SNVT_temp_p (105) SCPT_CoolSetpoint (75)	24.98 – 60.08°F -3.9 - 15.6°C Default: 43.88°F / 6.6°C	Y	Cool Setpoint (nviCoolSetpt) is set to nciCoolsetpt on power-up or loss of communication unless nciDefaults =1. If nciDefaults = 1, nviCoolSetpt will retain the last valid value when power is restored. Refer to the appropriate Operating Manual for suitable variable values. Loss of communication is determined by Receive Heartbeat (nciRCvHrtBt). If Receive Heartbeat is greater than zero, then communication is considered lost when nviCoolSetpt is not written to again before the Receive Heartbeat timer expires. Each time nviCoolSetpt is written, the Receive Heartbeat timer is reset. If Receive Heartbeat is set to 0, then this function is disabled and communication loss is never detected.
Default Values					
	nciDefaults	SNVT_switch (95) SCPT_Default Behavior (71)	0 = Use Default (nci) Values 1 = Use last valid value Default: 0 (Use Default Values)	N	Determines the set of values used upon chiller power-up and communication failure. The choice is the stated default (nci) values or last valid value and is used with the following variables: Chiller Enable Capacity Limit Cool Setpoint Heat Setpoint Mode

1. Voltage, Power, Current, and Percent RLA are available per compressor with the installation of an optional VFD package on AWS chillers

Point Name	LonWorks Variable	SNVT/SCPT Type (Index)	Range/Default (In Units)	Heart-beat	Description
Ice Setpoint					
	nciIceSetpt	SNVT_temp_p (105) UCPT_IceSetpoint	AWS/AWV: 17.6 – 39.2°F -8.0 – 4.0°C AGZ-D/AGZ-E/AMZ: 15.08 – 38.12°F -9.4 – 3.4°C Default: 24.98°F / -3.9°C	Y	Establishes the default Setpoint for the Leaving Fluid Temperature when it is in the ice mode, unless nciDefaults =1. If nciDefaults = 1, the last valid value is used. Refer to the appropriate Operating Manual for suitable variable values. Ice Setpoint - Network (nviIceSpt) is set to the value of nciIceSetpt upon chiller on power-up or loss of communication unless nciDefaults =1. If nciDefaults = 1, nviIceSpt will retain the last valid value when power is restored. Refer to the appropriate Operating Manual for suitable variable values. Loss of communication is determined by Receive Heartbeat (nciRCvHrtBt). If Receive Heartbeat is greater than zero, then communication is considered lost if the nvi is not written to again before the Receive Heartbeat timer expires. Each time nviIceSpt is written, the Receive Heartbeat timer is reset. If Receive Heartbeat is set to 0, then this function is disabled and communication loss is never detected.
Location					
	nciLocation	SNVT_str_asc (36) SCPT_location (17)	20 characters Default: <Blank>	N	Provides a description of the physical location of the chiller. The location can be changed via the BAS. However, if the value is changed by another source, the value on the BAS is not updated until power is cycled. Changes from the BAS are written to the unit controller immediately.
Maximum Send Time					
	nciMaxSendTime	time_sec (107) SCPTmaxSendTime (49)	0 – 6553.4 sec Default: 0 sec (no automatic update)	N	Controls the maximum period of time that expires before the following network variables are transmitted: nvoChillerStat nvoActiveSetpt nvoActCapacity nvoLvgChWTemp nvoEntChWTemp
Minimum Send Time					
	nciMinSendTime	time_sec (107) SCPTminSendTime (52)	0 – 6553.4 sec Default: 10 sec	N	Controls the minimum period of time that expires before the following variables can be retransmitted: nvoActCapacity nvoCapacityLim nvoCompDisTemp nvoCondRefPres nvoCondSatRefTmp nvoEntChWTemp nvoEvapRefPress nvoEvapSatRefTmp nvoLvgChWTemp nvoOutdoorTemp nvoSuctionTemp
Receive Heartbeat					
	nciRCvHrtBt	SNVT_time_sec (107) SCPT_maxRcvTime (48)	0 – 6553.4 sec Default: 0 sec	Y	Defines the maximum time that elapses after the last update to a specified network variable input before the unit starts to use the value contained in the corresponding network configuration variable (nci). This variable is only applicable when nciDefaults is set to 0. If nciDefaults is set to 1, this variable will be set to 0 by the chiller application. The following variables use Receive Heartbeat: nviCapacityLim nviChillerEnable nviCoolSetpt nviIceSpt nviMode
Software Identification (Major Version)					
	nciDevMajVer	SCPTdevMajVer (165)	0 – 255 Default: 1	N	Displays the major revision number for the chiller Lonworks communication module firmware.
Software Identification (Minor Version)					
	nciDevMinVer	SCPTdevMinVer (166)	0 – 255 Default: 0	N	Displays the minor revision number for the chiller Lonworks communication module firmware.

1. Voltage, Power, Current, and Percent RLA are available per compressor with the installation of an optional VFD package on AWS chillers

Other Variables

The following variables are defined in the LONWORKS application but not currently supported by the current Chiller Unit Controller. These variables may be visible from the BAS or other LONWORKS configuration tool:

- nciHeatSetpt
- nviHeatSetp
- nvoEntHRWTemp
- nvoLvgHRWTemp

Alarms

Alarm Management

The Chiller Unit Controller has various ways of managing alarms, depending on the protocol. Using one of the mechanisms available, alarms can be recognized and acknowledged by alarm class or individually, and cleared from the network.

Alarm Classes

Alarms in the unit controller are divided into three classes: Faults, Problems, and Warnings. Fault alarms have the highest priority. Problem alarms have the next priority. Warning alarms have the lowest priority. The alarms within each class are not prioritized in any way. Refer to the applicable chiller Installation, Operation, and Maintenance (IOM) Manual from www.DaikinApplied.com for a description of each alarm.

Fault Alarms

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

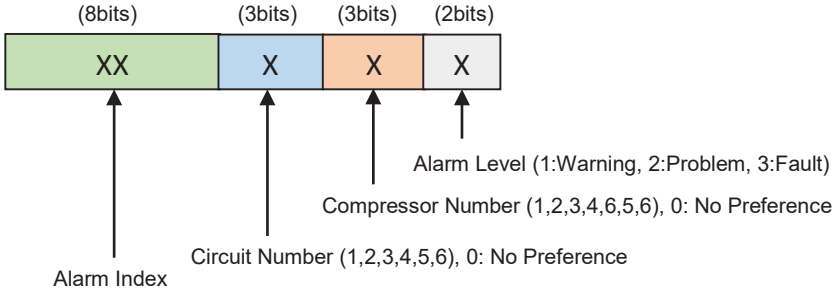
Problem Alarms

Problem alarms do not cause compressor shutdown but do 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.

Figure 1: Alarm Code Format



Alarm Monitoring

Monitor Alarm Individually

The Chiller Unit Controller provides individual alarm identification through a unique value for each alarm. The value assigned to each alarm is the same for both BACnet and LonWorks applications.

Monitor by Alarm Code or Alarm Index

Alarms can be monitored by alarm code or alarm index. Monitoring by alarm index provides a more generic alarm, while monitoring by alarm code provides more detail. For example, Alarm Index 7 indicates a compressor maintenance warning. However, by monitoring the alarm code, it is possible to view which compressor needs maintenance. The Alarm Index is used in calculating the alarm code as illustrated in Figure 1.

Alarm Data Availability

Table 11 lists all BACnet and LonWorks alarms available for each chiller model. Refer to "BACnet Alarms" or "LonWorks Alarms" for details on alarm monitoring, notification, and clearing for the respective network protocol.

Table 11: Alarm Data Points by Chiller Model

Data Point	AWS Application Version 2507500204 or Earlier	AWS Application Version 2507500205 or Later	AGZ-D/ AGZ-E	AMZ	AWV	ADS	WME-B	WWV
Clear Alarm - Network	X	X	X	X	X	X	X	X
Warning Alarm Code	X	X	X	X	X	X	X	X
Problem Alarm Code	X	X	X	X	X	X	X	X
Fault Alarm Code	X	X	X	X	X	X	X	X
Warning Alarm Index	X	X	X	X	X	X	X	X
Problem Alarm Index	X	X	X	X	X	X	X	X
Fault Alarm Index	X	X	X	X	X	X	X	X
Notification Class - Faults	X	X	X	X	X	X	X	X
Notification Class - Problems	X	X	X	X	X	X	X	X
Notification Class - Warnings	X	X	X	X	X	X	X	X
Alarm/Limit Controller Communication Failed	X	X			X	X		
Ambient Temperature Low - Start Inhibited	X	X	X	X	X			
Bad Current Limit Input Warning	X	X						
Bad Demand Limit Input Warning	X	X	X	X	X	X		X
Bad Setpoint Override Input Warning	X	X	X	X	X	X		X
Chiller Network Communication Warning						X		
Circuit #n Failed Pumpdown Warning	X	X	X	X	X	X		X
Circuit #n Ground Fault Protection					X			
CIRCUIT SHUTDOWN - Condenser Pressure High Trip Circuit #n Fault			X	X				
CIRCUIT SHUTDOWN - Condenser Pressure Sensor Circuit #n Fault			X	X				
CIRCUIT SHUTDOWN - Evaporator 1 Freeze Protection Fault	X	X						
CIRCUIT SHUTDOWN - Evaporator 2 Freeze Protection Fault	X	X						
CIRCUIT SHUTDOWN - Evaporator Pressure Sensor Circuit #n Fault			X	X				
CIRCUIT SHUTDOWN - Low Evaporator Pressure Trip Circuit #n Fault			X	X				
CIRCUIT SHUTDOWN - Mechanical High Pressure Trip Circuit 1				X				
CIRCUIT SHUTDOWN - Mains PVM Fault #n								X
CIRCUIT SHUTDOWN - Motor Protector Trip Circuit 1				X				
CIRCUIT SHUTDOWN - Motor Earth Fault #n								X
CIRCUIT SHUTDOWN - Number of Allowed Re-Starts Exceeded Circuit 1				X				
CIRCUIT SHUTDOWN - Motor PVM Fault #n								X
CIRCUIT SHUTDOWN - PVM GFP Circuit #n Fault			X	X				
CIRCUIT SHUTDOWN - Suction Temperature Sensor Fault Circuit 1				X				
CIRCUIT SHUTDOWN - VFD Control Card High Temperature #n								X
Compressor 1 IGV Position Failure							X	
Compressor 1 IGV Position Warning							X	
Compressor 1 VFD Cooling Fin Overheat Warning							X	
Compressor 2 IGV Position Failure							X	
Compressor 2 IGV Position Warning							X	
Compressor 2 VFD Cooling Fin Overheat Warning							X	
Compressor Controller Communication Failed	X	X	X		X			X
COMPRESSOR LOCKOUT - Number of Allowed Re-Starts Exceeded Circuit #n Compressor #n Fault	X	X	X	X				
Compressor Oil Feed Loss					X			X
COMPRESSOR SHUTDOWN - Compressor Did Not Stop							X	
COMPRESSOR SHUTDOWN - Compressor Does Not Start							X	
COMPRESSOR SHUTDOWN - COM ERROR with COMPRESSOR VFD Circuit #n Comp #n	X[1]	X[1]			X			X
COMPRESSOR SHUTDOWN - COMPRESSOR VFD Fault Circuit #n Comp #n	X[1]	X[1]			X		X	X
COMPRESSOR SHUTDOWN - COMPRESSOR VFD Over Heat #n Fault	X[1]	X[1]			X			X
COMPRESSOR SHUTDOWN - Condenser Pressure High Circuit #n Compressor #n Fault	X	X	X	X	X	X		X
COMPRESSOR SHUTDOWN - Condenser Pressure Sensor Circuit #n Compressor #n Fault	X	X	X	X	X	X	X	X
COMPRESSOR SHUTDOWN - Condenser Pressure Sensor Fault							X	
COMPRESSOR SHUTDOWN - Condenser Water Flow Loss							X	X

1. Available for AWS with optional VFD only on AWS chillers.

Data Point	AWS Application Version 2507500204 or Earlier	AWS Application Version 2507500205 or Later	AGZ-D/ AGZ-E	AMZ	AWV	ADS	WME-B	WWV
COMPRESSOR SHUTDOWN - Current Overload Trip #n Fault	X	X	X	X	X	X	X	X
COMPRESSOR SHUTDOWN - Discharge Pressure High							X	
COMPRESSOR SHUTDOWN - Discharge Pressure Sensor Fault							X	
COMPRESSOR SHUTDOWN - Discharge Temperature High Circuit #n Compressor #n Fault	X	X			X	X	X	X
COMPRESSOR SHUTDOWN - Discharge Temperature Sensor Circuit #n Compressor #n Fault	X	X			X	X	X	X
COMPRESSOR SHUTDOWN - Discharge Temperature Sensor Fault #n							X	
COMPRESSOR SHUTDOWN - Enable Relay OFF Fault							X	
COMPRESSOR SHUTDOWN - Evaporator Leaving Water Temperature Low (Freeze) Fault	X	X	X	X	X	X		
COMPRESSOR SHUTDOWN - Evaporator Pressure Low Circuit #n Compressor #n Fault	X	X	X	X	X			X
COMPRESSOR SHUTDOWN - Evaporator Pressure Sensor Circuit #n Compressor #n Fault	X	X	X	X	X	X		X
COMPRESSOR SHUTDOWN - IGV Calibration Fault							X	
COMPRESSOR SHUTDOWN - IGV Driver Fault							X	
COMPRESSOR SHUTDOWN - IPS Over Temperature							X	
COMPRESSOR SHUTDOWN - Lift Pressure Low #n							X	
COMPRESSOR SHUTDOWN - Liquid Line Temperature Sensor Fault #n							X	X
COMPRESSOR SHUTDOWN - Low Discharge Superheat Circuit #n Compressor #n Fault	X	X			X	X		X
COMPRESSOR SHUTDOWN - Low Motor Current #n							X	
COMPRESSOR SHUTDOWN - Low Pressure Ratio #n Fault	X	X				X		X
COMPRESSOR SHUTDOWN - Low Rotor Pump Superheat							X	
COMPRESSOR SHUTDOWN - MBC Fault							X	
COMPRESSOR SHUTDOWN - MBC Modbus Communication Fault							X	
COMPRESSOR SHUTDOWN - MBC Orbit Error							X	
COMPRESSOR SHUTDOWN - Mechanical Low Pressure Trip Circuit #n Compressor #n	X	X						
COMPRESSOR SHUTDOWN - Mechanical High Pressure Trip Circuit #n Compressor #n Fault	X	X	X	X	X		X	X
COMPRESSOR SHUTDOWN - Motor Case Temperature Sensor Fault							X	
COMPRESSOR SHUTDOWN - Motor Gap Temperature High							X	
COMPRESSOR SHUTDOWN - Motor Gap Temperature Sensor Fault							X	
COMPRESSOR SHUTDOWN - Motor Protector Trip Circuit #n Compressor #n			X					
COMPRESSOR SHUTDOWN - Motor Speed Fail							X	
COMPRESSOR SHUTDOWN - Motor Temp Sensor Circuit #n Compressor #n	X	X			X	X		
COMPRESSOR SHUTDOWN - Motor Temperature High Circuit #n Compressor #n Fault	X	X			X	X		X
COMPRESSOR SHUTDOWN - No Pressure Change After Start Circuit #n	X	X	X	X		X		X
COMPRESSOR SHUTDOWN - No Pressure at Startup Circuit #n	X	X			X	X		X
COMPRESSOR SHUTDOWN - Oil Delta Pressure High Circuit #n Compressor #n Fault	X	X			X	X		X
COMPRESSOR SHUTDOWN - Oil Feed Pressure Sensor Circuit #n Compressor #n Fault	X	X			X	X		X
COMPRESSOR SHUTDOWN - Overvoltage #n								X
COMPRESSOR SHUTDOWN - Outside Air Temperature Sensor Fault	X	X	X	X	X	X		
COMPRESSOR SHUTDOWN - Primary Power Fail							X	
COMPRESSOR SHUTDOWN - Refrig Charge						X		
COMPRESSOR SHUTDOWN - Rotor Pump Temperature Sensor Fault							X	
COMPRESSOR SHUTDOWN - Slide Position Sensor #n Fault	X	X						
COMPRESSOR SHUTDOWN - Starter Fault Compressor #n Fault	X	X				X		
COMPRESSOR SHUTDOWN - Stator Temperature High							X	
COMPRESSOR SHUTDOWN - Stator Temperature1 Sensor Fault							X	
COMPRESSOR SHUTDOWN - Stator Temperature2 Sensor Fault							X	
COMPRESSOR SHUTDOWN - Stator Temperature3 Sensor Fault							X	
COMPRESSOR SHUTDOWN - Suction Pressure Low							X	
COMPRESSOR SHUTDOWN - Suction Pressure Sensor Fault							X	

1. Available for AWS with optional VFD only on AWS chillers.

Data Point	AWS Application Version 2507500204 or Earlier	AWS Application Version 2507500205 or Later	AGZ-D/ AGZ-E	AMZ	AWV	ADS	WME-B	WWV
COMPRESSOR SHUTDOWN - Suction Temperature Sensor Circuit #n Compressor #n Fault	X	X	X			X	X	X
COMPRESSOR SHUTDOWN - Surge Temperature							X	
COMPRESSOR SHUTDOWN - Undervoltage #n								X
COMPRESSOR SHUTDOWN - VFD Modbus Communication Fault							X	
Compressor VFD Current High #n					X			
Condenser Leaving Water Temperature Sensor Failure							X	X
CONDENSER PUMP ON - Condenser Water Freeze Protection							X	
Controller Board #n Offline Fault	X	X	X	X	X	X		X
DC Fan Controller Comm Failure					X			
DC Fan Fault #n					X			
Economizer EXV Comm Failure					X			
Economizer Refrigerant Pressure Sensor Fault #n					X			
Economizer Temperature Sensor Fault #n					X			
Evaporator Entering Water Temperature Sensor Fault	X	X			X	X	X	X
Evaporator Entering Water Temperature Sensor Warning			X	X				
Evaporator EXV Comm Failure					X			X
Evaporator EXV Motor Error #n					X			
Evaporator Leaving Water Temperature 1 Sensor Fault	X	X						
Evaporator Leaving Water Temperature 2 Sensor Fault	X	X						
EVAPORATOR PUMP ON - Evaporator Water Freeze Protection							X	
External Event	X	X	X	X		X		
EXV Controller Communication Failed - Circuit #n	X	X	X	X	X			X
INHIBIT LOAD - Compressor Motor Current High #n Problem	X[1]							
INHIBIT LOAD - Condenser Pressure High Circuit #n Problem	X				X			X
INHIBIT LOAD - Evaporator Pressure Low #n Problem	X				X			X
Low Pressure Difference or Ratio #n					X			
Low Refrigerant Charge Circuit #n Warning						X		
Multistart Fail Compressor #n					X			
Option Controller Communication Failed Warning	X	X						
Power Loss While Running Circuit #n Problem	X	X			X	X		X
PUMP #1 START ATTEMPTED - Condenser Pump #2 Failure							X	X
PUMP #2 START ATTEMPTED - Condenser Pump #1 Failure							X	X
PUMP 1 START ATTEMPTED - Evaporator Pump #2 Failure			X	X	X		X	X
PUMP 2 START ATTEMPTED - Evaporator Pump #1 Failure			X	X	X		X	X
Rapid Restore Module Communication Failure			X					
SHUTDOWN - Phase Voltage Protection Fault	X	X				X		X
UNIT Ground Fault Protection					X			
Unit Low Source Temperature Warning								X
UNIT Power Restore Warning	X				X			
UNIT SHUTDOWN - Condenser Entering Water Temperature Sensor Fault							X	X
UNIT SHUTDOWN - Condenser LWT or EWT Low (Freeze)								X
UNIT SHUTDOWN - Evaporator Leaving Water Temperature Sensor Fault	X	X	X	X	X	X	X	X
UNIT SHUTDOWN - Evaporator LWT or EWT Low (Freeze)	X	X	X	X	X			X
UNIT SHUTDOWN - Evaporator Water Flow Loss Fault	X	X	X	X	X	X	X	X
UNIT STOP - Emergency Stop Alarm	X	X			X	X		X
UNIT STOP - Evaporator Water Temperatures Inverted	X	X			X	X		X
UNIT STOP - External Alarm	X	X	X	X	X	X	X	X
UNIT STOP - PVM GFP Fault			X	X				
UNLOAD - Compressor Motor Current High #n Problem	X[1]							
UNLOAD - Condenser Pressure High #n Problem	X		X		X			
UNLOAD - Evaporator Pressure Low #n Problem	X		X		X			
Waterside Economoizer EWT Sensor Failure					X			
Waterside Economizer Valve Fault					X			
Waterside Economizer Valve Problem					X			

1. Available for AWS with optional VFD only on AWS chillers.

BACnet Alarms

BACnet Alarm Monitoring

The Chiller Unit Controller may have alarms monitored by one of four methods: individually by BACnet Binary Value Objects, BACnet Binary Output, alarm class, or notification classes.

Table 12 describes all available BACnet alarm objects. See notes at the end of the table for additional information about specific parameters.

Monitor Alarm Individually

To monitor alarms individually, read the Present_Value of the desired Binary Value. Each alarm has its own Binary Value object. If the Present_Value is Inactive (0), the alarm is not active. If the Present_Value is Active (1), the alarm is active.

Monitor Alarm by BACnet Binary Output

To monitor wether or not there is any active alarm, read the Alarm Digital Output Binary Output object. If the Present_Value is Inactive (0), no alarms are active. If the Present_Value is Active (1), there is at least one alarm active in the chiller.

Monitor by Alarm Class (Code or Index)

To monitor alarms by alarm class, read the Present_Value of the appropriate Analog Value object (Warnings, Problems and Faults). The Present_Value displays a value that corresponds to the highest alarm index or code that is active. *It is possible to have multiple active alarms, but only the alarm with the highest index or code is displayed.* If the Present_Value displays a zero, there are no active alarms. The alarm code and index is explained in Figure 1.

Monitor by Alarm Notification Class (Intrinsic Reporting)

The Chiller Unit Controller has three Notification Class objects for alarms and uses Intrinsic Reporting as defined by ASHRAE 135-2004, A BACnet Data Communication Protocol for Building Automation and Control Networks. Refer to ASHRAE 135-2004 Section 13 - Alarm and Event Services for more information (www.ashrae.org).

In general, Intrinsic Reporting allows the unit controller to generate event notifications directed to one or more recipients (maximum 20 recipients). There is one notification class object for each class of alarms. You must subscribe to the notification class objects in order to use them. The Recipient List property must indicate when and to which device notification should be made. This is a standard BACnet data type as defined in ANSI/ASHRAE 135-2004 (www.ashrae.org). The Event_Enable property of each object enables and disables the reporting of To-OffNormal, To-Fault, and To-Normal events. For example, if you do not want an event generated when the object returns to a normal state after being in alarm, set the To-Normal bit of the objects Event_Enable property to 0.

Refer to BACnet Intrinsic Alarming for the complete list of all BACnet alarm objects sorted by notification class.

Clearing Alarms

Alarms within the Chiller Unit Controller can be cleared via BACnet by setting the ClearAlarms variable to a value of 1. After the alarms are cleared, this variable returns to Normal (0). Refer to Table 4, Clear Alarm - Network.

Table 12: BACnet Alarm Objects

Point Name	Object Type/ Instance	Read/Write Access[1]	BACnet Object Name/Type	Default/Range	Description
Alarm Digital Output					
	BI:10	R	AlarmDigitalOutput	0 = No Alarm 1 = Alarm	Indicates whether an alarm condition has occurred. This variable must be polled for alarm notification.
Ambient Temperature Low Problem					
	BV:533	C	StartInhbtAmbTempLow	0 = No Alarm 1 = In Alarm	Indicates whether the START INHIBITED – Ambient Temperature Low Problem alarm is active (1) or not active (0).
Alarm/Limit Controller Communication Failure					
	BV:17	C[2]	AlarmLimitCtrlrCommFail	0 = No Alarm 1 = In Alarm	Indicates whether the Alarm/Limit Controller Communication Failure fault alarm is normal (0) or in alarm (1)
CIRCUIT SHUTDOWN - Condenser Pressure High Trip Circuit #n Fault					
Circuit 1	BV:676	C[2]	C1OFF CondPressHi	0 = No Alarm 1 = In Alarm	Indicates whether the CIRCUIT SHUTDOWN - Condenser Pressure High Trip Circuit #n Fault is active (1) or inactive (2). There is one BACnet object for each circuit/compressor combination.
Circuit 2	BV:678		C2OFFCondPressHi		
CIRCUIT SHUTDOWN - Condenser Pressure Sensor Circuit #n Fault					
Circuit 1	BV:668	C[2]	C1CondPsenf	0 = No Alarm 1 = In Alarm	Indicates whether the CIRCUIT SHUTDOWN - Condenser Pressure Sensor Circuit #n Fault is active (1) or inactive (2). There is one BACnet object for each circuit/compressor combination.
Circuit 2	BV:670		C2CondPsenf		
CIRCUIT SHUTDOWN - Evaporator 1 Freeze Protection Fault					
	BV:751	C[2]	Evap1FreezeProtect	0 = No Alarm 1 = In Alarm	Indicates whether the CIRCUIT SHUTDOWN - Evaporator 1 Freeze Protection Fault alarm is active (1) or inactive (2).
CIRCUIT SHUTDOWN - Evaporator 2 Freeze Protection Fault					
	BV:752	C[2]	Evap2FreezeProtect	0 = No Alarm 1 = In Alarm	Indicates whether the CIRCUIT SHUTDOWN - Evaporator 2 Freeze Protection Fault alarm is active (1) or inactive (2).
CIRCUIT SHUTDOWN - Evaporator Pressure Sensor Circuit #n Fault					
Circuit 1	BV:711	C[2]	C1EvapPsenf	0 = No Alarm 1 = In Alarm	Indicates whether the CIRCUIT SHUTDOWN - Evaporator Pressure Sensor Circuit #n Fault is active (1) or inactive (2). There is one BACnet object for each circuit/compressor combination.
Circuit 2	BV:713		C2EvapPsenf		
CIRCUIT SHUTDOWN - Low Evaporator Pressure Trip Circuit #n Fault					
Circuit 1	BV:704	C[2]	C1LowEvPr	0 = No Alarm 1 = In Alarm	Indicates whether the CIRCUIT SHUTDOWN - Low Evaporator Pressure Trip Circuit #n Fault is active (1) or inactive (2). There is one BACnet object for each circuit/ compressor combination.
Circuit 2	BV:706		C2LowEvPr		
CIRCUIT SHUTDOWN - Mains PVM Fault #n					
Circuit 1[9]	BV:35	C	C1OffMainPhaseLoss	"0 = No Alarm 1 = Alarm"	Indicates whether the CIRCUIT SHUTDOWN - Mains PVM Fault alarm is active (1) or not active (0).
Circuit 2[9]	BV:36	C	C2OffMainPhaseLoss		

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2. Although they are commandable, Daikin Applied recommends not writing to these points. If any priority is commanded to a 1 and the object is used for Intrinsic Alarming, the object generates an alarm via BACnet, and the alarm is visible on the unit controller keypad/display, even if the alarm is not present in the chiller. The chiller will continue to function as if the alarm does not exist. If any priority is commanded to a 0 and the object is used for Intrinsic Alarming, the alarm never appears via BACnet nor is it visible on the keypad/display, even though it may be an active chiller alarm. See BACnet Intrinsic Alarming for details.
3. Object applies only to AWS application software version 2507500204 or earlier. This point will always read 0 in subsequent versions of the AWS application.
4. If the BACnet Workstation is unable to subscribe to the recipient_list, you can still subscribe to alarms using the unit controller keypad/display. Navigate to the IP Setup or MS/TP Setup menu and enter the Device Instance of the device to receive the alarms in the "NC Dev 1=", "NC Dev 2=" or "NC Dev 3=" entries. You must cycle power to the unit controller after changing these properties via the keypad/display.
5. Maximum of 20 recipients at one time.
6. A lower number indicates a higher priority.
7. Object applies only to AGZ and AMZ chiller models.
8. Object applies only to AWV chiller models.
9. Object applies only to WWV chiller models.
10. Object applies to only AGZ chiller models.
11. Object applies to only AMZ chiller models.

Point Name	Object Type/ Instance	Read/Write Access[1]	BACnet Object Name/Type	Default/Range	Description
CIRCUIT SHUTDOWN - Mechanical High Pressure Alarm Circuit #n[11]					
Circuit 1	BI:18	C[2]	C1HighPress	0 = Normal 1 = In Alarm	Indicates whether the Mechanical High Pressure fault alarm is normal (0) or in alarm (1).
CIRCUIT SHUTDOWN - Motor Earth Fault #n					
Circuit 1[9]	BV:27	C	C1OffMtrEarthLkg	"0 = No Alarm 1 = Alarm"	Indicates whether the CIRCUIT SHUTDOWN - Motor Earth Fault alarm is active (1) or not active (0).
Circuit 2[9]	BV:28	C	C2OffMtrEarthLkg		
CIRCUIT SHUTDOWN - Motor Protector Trip Circuit #n[11]					
Circuit 1	BI:13	C[2]	C1MotorProtect	0 = Normal 1 = In Alarm	Indicates whether the Motor Protector Trip Circuit #n fault alarm is normal (0) or in alarm (1).
CIRCUIT SHUTDOWN - Motor PVM Fault #n					
Circuit 1[9]	BV:31	C	C1OffMtrPhaseLoss	"0 = No Alarm 1 = Alarm"	Indicates whether the CIRCUIT SHUTDOWN - Motor PVM Fault alarm is active (1) or not active (0).
Circuit 2[9]	BV:32	C	C2OffMtrPhaseLoss		
CIRCUIT SHUTDOWN - Number of Compressor Re-Starts Exceeded Circuit #n[11]					
Circuit 1	BI:24	C[2]	C1NbrRestarts	0 = No Alarm 1 = In Alarm	Indicates whether the Number of Compressor Re-Starts Exceeded Circuit #n fault alarm is normal (0) or in alarm (1).
CIRCUIT SHUTDOWN - VFD Control Card High Temperature #n					
Circuit 1[9]	BV:23	C	C1OffCtrlCardTmpHi	"0 = No Alarm 1 = Alarm"	Indicates whether the CIRCUIT SHUTDOWN - VFD Control Card High Temperature alarm is active (1) or not active (0).
Circuit 2[9]	BV:24	C	C2OffCtrlCardTmpHi		
Clear Alarm - Network					
	BV:8	C	ClearAlarm	0 = Normal 1 = Clear Alarm	Clears all active alarms. Many alarms are automatically clearing alarms. Of the alarms that need to be manually cleared, the alarms listed below cannot be cleared from the network: COMPRESSOR SHUTDOWN - Evaporator Pressure Low Circuit #n Compressor #n Fault COMPRESSOR SHUTDOWN - Condenser Pressure High Circuit #n Compressor #n Fault COMPRESSOR SHUTDOWN - Motor Temperature High Circuit #n Compressor #n Fault UNIT SHUTDOWN – Evaporator Leaving Water Temp Low (Freeze) COMPRESSOR SHUTDOWN - Mechanical High Pressure Trip Circuit #n Compressor #n Fault COMPRESSOR SHUTDOWN - Mechanical Low Pressure Trip Circuit #n Compressor #n Fault

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6. A lower number indicates a higher priority.
7. Object applies only to AGZ and AMZ chiller models.
8. Object applies only to AWV chiller models.
9. Object applies only to WWV chiller models.
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11. Object applies to only AMZ chiller models.

Point Name	Object Type/ Instance	Read/Write Access[1]	BACnet Object Name/Type	Default/Range	Description
Compressor Controller Communication Failed - Circuit #n					
Circuit 1	BV:9	C	C1OffCmpCtrlrComFail	"0 = No Alarm 1 = Alarm"	Indicates whether the Compressor Controller Communication Failed alarm is active (1) or not active (0).
Circuit 2	BV:10	C	C2OffCmpCtrlrComFail		
COMP SHUTDOWN - COMPRESSOR VFD Over Heat #n Fault					
Circuit 1 Compressor 1	BV:942	C2	C1Cmp1OffVfdTempHi	0 = No Alarm 1 = In Alarm	Indicates whether the COMPRESSOR SHUTDOWN - COMPRESSOR VFD Over Heat #n Fault is active (1) or inactive (2).There is one BACnet object for each circuit/ compressor combination.
Circuit 2 Compressor 1	BV:944		C2Cmp1OffVfdTempHi		
Circuit 3 Compressor 1	BV:946		C3Cmp1OffVfdTempHi		
COMP SHUTDOWN - Condenser Pressure High Circuit #n Compressor #n Fault					
Circuit 1 Compressor 1	BV:676	C²	C1Comp1OFFCondPressHi	0 = No Alarm 1 = In Alarm	Indicates whether the COMPRESSOR SHUTDOWN - Condenser Pressure High Circuit #n Fault is active (1) or inactive (2).There is one BACnet object for each circuit/ compressor combination.
Circuit 2 Compressor 1	BV:678		C2Comp1OFFCondPressHi		
Circuit 3 Compressor 1	BV:680		C3Comp1OFFCondPressHi		
Circuit 4 Compressor 1	BV:681		C4Comp1OFFCondPressHi		
COMP SHUTDOWN - Condenser Pressure Sensor Circuit #n Compressor #n Fault					
Circuit 1 Compressor 1	BV:668	C²	C1Comp1OFFCondPressSen	0 = No Alarm 1 = In Alarm	Indicates whether the COMPRESSOR SHUTDOWN - Condenser Pressure Sensor Circuit #n Compressor #n Fault alarm is active (1) or inactive (2). There is one BACnet object for each circuit/compressor combination.
Circuit 2 Compressor 1	BV:670		C2Comp1OFFCondPressSen		
Circuit 3 Compressor 1	BV:672		C3Comp1OFFCondPressSen		
Circuit 4 Compressor 1	BV:673		C4Comp1OFFCondPressSen		
Circuit 1 Ground Fault Protection[8]	BI:41	C2	C1GroundFault	0 = No Alarm 1 = In Alarm	Indicates whether the Circuit 1 Ground Fault Protection alarm is normal (0) or in alarm (1).
Circuit 2 Ground Fault Protection[8]	BI:42	C2	C2GroundFault	0 = No Alarm 1 = In Alarm	Indicates whether the Circuit 2 Ground Fault Protection alarm is normal (0) or in alarm (1).
COMP SHUTDOWN - Current Overload Trip #n Fault					
Circuit 1	BV:606	C²	C1Cmp1OffCurrentHi	0 = No Alarm 1 = In Alarm	Indicates whether the COMPRESSOR SHUTDOWN - Current Overload Trip #n Fault is active (1) or inactive (2). There is one BACnet object for each circuit/compressor combination.
	BV:607		C1Cmp2OffCurrentHi		
Circuit 2	BV:608		C1Cmp1OffCurrentHi		
Circuit 3	BV:610		C3Cmp1OffCurrentHi		
COMP SHUTDOWN - Discharge Temp High Circuit #n Compressor #n Fault					
Circuit 1 Compressor 1	BV:694	C²	C1Comp1OFFDischTempHi	0 = No Alarm 1 = In Alarm	Indicates whether the COMPRESSOR SHUTDOWN - Discharge Temperature High Circuit #n Compressor #n Fault is active (1) or inactive (2).There is one BACnet object for each circuit/compressor combination.
Circuit 2 Compressor 1	BV:696		C2Comp1OFFDischTempHi		
Circuit 3 Compressor 1	BV:698		C3Comp1OFFDischTempHi		
Circuit 4 Compressor 1	BV:699		C4Comp1OFFDischTempHi		

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6. A lower number indicates a higher priority.
7. Object applies only to AGZ and AMZ chiller models.
8. Object applies only to AWV chiller models.
9. Object applies only to WWV chiller models.
10. Object applies to only AGZ chiller models.
11. Object applies to only AMZ chiller models.

Point Name	Object Type/ Instance	Read/Write Access[1]	BACnet Object Name/Type	Default/Range	Description
COMP SHUTDOWN - Discharge Temperature Sensor Circuit #n Compressor #n Fault					
Circuit 1 Compressor 1	BV:688	C[2]	C1Comp1OFFDischTempSen	0 = No Alarm 1 = In Alarm	Indicates whether the COMPRESSOR SHUTDOWN - Discharge Temperature Sensor Circuit #n Fault is active (1) or inactive (2).There is one BACnet object for each circuit/ compressor combination.
Circuit 2 Compressor 1	BV:690		C2Comp1OFFDischTempSen		
Circuit 3 Compressor 1	BV:692		C3Comp1OFFDischTempSen		
Circuit 4 Compressor 1	BV:693		C4Comp1OFFDischTempSen		
COMP SHUTDOWN - Evaporator Pressure Low Circuit #n Compressor #n Fault					
Circuit 1 Compressor 1	BV:704	C[2]	C1Comp1OFFEvapPressLow	0 = No Alarm 1 = In Alarm	Indicates whether the COMPRESSOR SHUTDOWN - Evaporator Pressure Low Circuit #n Compressor #n Fault is active (1) or inactive (2).There is one BACnet object for each circuit/compressor combination.
Circuit 2 Compressor 1	BV:706		C2Comp1OFFEvapPressLow		
Circuit 3 Compressor 1	BV:708		C3Comp1OFFEvapPressLow		
Circuit 4 Compressor 1	BV:709		C4Comp1OFFEvapPressLow		
COMP SHUTDOWN - Evaporator Pressure Sensor Circuit #n Compressor #n Fault					
Circuit 1 Compressor 1	BV:711	C[2]	C1Comp1OFFEvapPressSen	0 = No Alarm 1 = In Alarm	Indicates whether the COMPRESSOR SHUTDOWN - Evaporator Pressure Sensor Circuit #n Compressor #n Fault is active (1) or inactive (2).There is one BACnet object for each circuit/compressor combination.
Circuit 2 Compressor 1	BV:713		C2Comp1OFFEvapPressSen		
Circuit 3 Compressor 1	BV:715		C3Comp1OFFEvapPressSen		
Circuit 4 Compressor 1	BV:716		C4Comp1OFFEvapPressSen		
COMP SHUTDOWN - Oil Feed Pressure Sensor Circuit #n Compressor #n Fault					
Circuit 1 Compressor 1	BV:802	C[2]	C1Comp1OFFOilFeedPSen	0 = No Alarm 1 = In Alarm	Indicates whether the COMPRESSOR SHUTDOWN - Oil Feed Pressure Sensor Circuit #n Compressor #n Fault is active (1) or inactive (2).There is one BACnet object for each circuit/compressor combination.
Circuit 2 Compressor 1	BV:804		C2Comp1OFFOilFeedPSen		
Circuit 3 Compressor 1	BV:806		C3Comp1OFFOilFeedPSen		
Circuit 4 Compressor 1	BV:807		C4Comp1OFFOilFeedPSen		
COMP SHUTDOWN - Outside Air Temperature Sensor Fault					
	BV:605	C[2]	UnitOFFOATempSenFail	0 = No Alarm 1 = In Alarm	Indicates whether the COMPRESSOR SHUTDOWN - Outside Air Temperature Sensor Fault is active (1) or inactive (2).
COMPRESSOR SHUTDOWN - Overvoltage #n					
Circuit 1[9]	BV:655	C	C1OffOverVoltage	"0 = No Alarm 1 = Alarm"	Indicates whether the COMPRESSOR SHUTDOWN - Overvoltage alarm is active (1) or not active (0).
Circuit 2[9]	BV:657	C	C2OffOverVoltage		

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5. Maximum of 20 recipients at one time.
6. A lower number indicates a higher priority.
7. Object applies only to AGZ and AMZ chiller models.
8. Object applies only to AWV chiller models.
9. Object applies only to WWV chiller models.
10. Object applies to only AGZ chiller models.
11. Object applies to only AMZ chiller models.

Point Name	Object Type/ Instance	Read/Write Access[1]	BACnet Object Name/Type	Default/Range	Description
COMP SHUTDOWN - Suction Temp Sensor Circuit #n Compressor #n Fault					
Circuit 1 Compressor 1	BV:857	C[2]	C1Comp1OFFSuctTempSen	0 = No Alarm 1 = In Alarm	Indicates whether the COMPRESSOR SHUTDOWN - Suction Temperature Sensor Circuit #n Compressor #n Fault is active (1) or inactive (2).There is one BACnet object for each circuit/compressor combination.
Circuit 2 Compressor 1	BV:859		C2Comp1OFFSuctTempSen		
Circuit 3 Compressor 1	BV:861		C3Comp1OFFSuctTempSen		
Circuit 4 Compressor 1	BV:862		C4Comp1OFFSuctTempSen		
COMP SHUTDOWN - Suction Temp Sensor Circuit #n Compressor #n Fault					
Circuit 1 Compressor 1	AI:105	C[2]	C1Comp1SuctionTemp	0 = No Alarm 1 = In Alarm	Indicates whether the COMPRESSOR SHUTDOWN - Suction Temperature Sensor Circuit #n Compressor #n Fault is active (1) or inactive (2).There is one BACnet object for each circuit/compressor combination.
Circuit 2 Compressor 1	AI:108		C2Comp1SuctionTemp		
Circuit 3 Compressor 1	AI:111		C3Comp1SuctionTemp		
Circuit 4 Compressor 1	AI:114		C4Comp1SuctionTemp		
COMPRESSOR SHUTDOWN - Undervoltage #n					
Circuit 1[9]	BV:661	C	C1OffUnderVoltage	"0 = No Alarm 1 = Alarm"	Indicates whether the COMPRESSOR SHUTDOWN - Undervoltage alarm is active (1) or not active (0).
Circuit 2[9]	BV:663	C	C2OffUnderVoltage		
Compressor VFD Current High 1[8]					
	BI:70	C2	C1Co1HighVfdCurrent	0 = No Alarm 1 = In Alarm	Indicates whether the Circuit 1 Compressor VFD Current High fault alarm is normal (0) or in alarm (1).
Compressor VFD Current High 2[8]					
	BI:71	C2	C2Co1HighVfdCurrent	0 = No Alarm 1 = In Alarm	Indicates whether the Circuit 2 Compressor VFD Current High fault alarm is normal (0) or in alarm (1).
Controller Board #n Offline Fault					
Unit	BV:925	C2	UnitBoardOffline	0 = No Alarm 1 = In Alarm	Indicates whether the Controller Board #n Offline Fault is active (1) or inactive (2).There is one BACnet object for each circuit/compressor combination. There is one BACnet object for each circuit.
Circuit 1	BV:882		C1ControlBoardOffline		
Circuit 2	BV:883		C2ControlBoardOffline		
Circuit 3	BV:884		C3ControlBoardOffline		
Circuit 4	BV:885		C4ControlBoardOffline		
DC Fan Controller Comm Failure[8]					
	BI:46	C2	DcFanCtrlCommFail	0 = Normal 1 = In Alarm	Indicates whether the DC Fan Controller Comm Failure fault alarm is normal (0) or in alarm (1).
DC Fan Fault 1[8]					
	BI:64	C2	C1DcFanFault	0 = Normal 1 = In Alarm	Indicates whether the Circuit 1 DC Fan warning alarm is normal (0) or in alarm (1).
DC Fan Fault 2[8]					
	BI:65	C2	C2DcFanFault	0 = Normal 1 = In Alarm	Indicates whether the Circuit 2 DC Fan warning alarm is normal (0) or in alarm (1).
Economizer EXV Comm Failure[8]					
	BI:47	C2	EconExvCommFail	0 = Normal 1 = In Alarm	Indicates whether the Economizer EXV Comm Failure warning alarm is normal (0) or in alarm (1).
Economizer Refrigerant Pressure Sensor Fault 1[8]					
	AI:234	C2	C1EconRefPress	0 = Normal 1 = In Alarm	Indicates whether the Circuit 1 Economizer Refrigerant Pressure Sensor Fault alarm is normal (0) or in alarm (1).

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6. A lower number indicates a higher priority.
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8. Object applies only to AWV chiller models.
9. Object applies only to WWV chiller models.
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Economizer Refrigerant Pressure Sensor Fault 2[8]					
	AI:235	C2	C2EconRefPress	0 = Normal 1 = In Alarm	Indicates whether the Circuit 2 Economizer Refrigerant Pressure Sensor Fault alarm is normal (0) or in alarm (1).
Economizer Temperature Sensor Fault 1[8]					
	AI:238	C2	C1EconRefTemp	0 = Normal 1 = In Alarm	Indicates whether the Circuit 1 Economizer Temperature Sensor Fault alarm is normal (0) or in alarm (1).
Economizer Temperature Sensor Fault 2[8]					
	AI:239	C2	C2EconRefTemp	0 = Normal 1 = In Alarm	Indicates whether the Circuit 2 Economizer Temperature Sensor Fault alarm is normal (0) or in alarm (1).
Evaporator Entering Water Temperature Sensor Fault					
	BV:917	C[2]	EvapEntWTempSensorFail	0 = No Alarm 1 = In Alarm	Indicates whether the Evaporator Entering Water Temperature Sensor Fault alarm is active (1) or not active (0).
Evaporator Entering Water Temperature Sensor Warning					
	BV:501	C	EvapEntWTempSensorFail	0 = No Alarm 1 = In Alarm	Indicates whether the Evaporator Entering Water Temperature Sensor Warning alarm is active (1) or not active (0).
Evaporator EXV Comm Failure[8]					
	BI:45	C2	EvapExvCommFail	0 = No Alarm 1 = In Alarm	Indicates whether the Evaporator EXV Comm Fault alarm is normal (0) or in alarm (1).
Evaporator EXV Motor Error 1[8]					
	BI:56	C2	C1EvapExvMtrFault	0 = No Alarm 1 = In Alarm	Indicates whether the Circuit 1 Evaporator EXV Motor Error Fault alarm is normal (0) or in alarm (1).
Evaporator EXV Motor Error 2[8]					
	BI:57	C2	C2EvapExvMtrFault	0 = No Alarm 1 = In Alarm	Indicates whether the Circuit 2 Evaporator EXV Motor Error Fault alarm is normal (0) or in alarm (1).
Evaporator Leaving Water Temperature 1 Sensor Fault					
	BV:749	C[2]	EvpLvgWTmp1SensorFail	0 = No Alarm 1 = In Alarm	Indicates whether the Evaporator Leaving Water Temperature 1 Sensor Fault alarm is active (1) or inactive (2).
Evaporator Leaving Water Temperature 2 Sensor Fault					
	BV:750	C[2]	EvpLvgWTmp2SensorFail	0 = No Alarm 1 = In Alarm	Indicates whether the Evaporator Leaving Water Temperature 2 Sensor Fault alarm is active (1) or inactive (2).
EXV Controller Communication Failed - Circuit #n					
Circuit 1	BV:13	C	C1OffEXVCrtlrComFail	"0 = No Alarm 1 = Alarm"	Indicates whether the EXV Controller Communication Failed alarm is active (1) or not active (0).
Circuit 2	BV:14	C	C2OffEXVCrtlrComFail		
INHIBIT LOAD - Compressor Motor Current High #n Problem[3]					
Circuit 1 Compressor 1	BV:578	C[2]	C1Cmp1HoldAmpsHi	0 = No Alarm 1 = In Alarm	Indicates whether the INHIBIT LOAD - Compressor Motor Current High #n Problem alarm is active (1) or inactive (2). There is one BACnet object for each circuit.
Circuit 2 Compressor 1	BV:580		C2Cmp1HoldAmpsHi		
Circuit 3 Compressor 1	BV:582		C3Cmp1HoldAmpsHi		

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2. Although they are commandable, Daikin Applied recommends not writing to these points. If any priority is commanded to a 1 and the object is used for Intrinsic Alarming, the object generates an alarm via BACnet, and the alarm is visible on the unit controller keypad/display, even if the alarm is not present in the chiller. The chiller will continue to function as if the alarm does not exist. If any priority is commanded to a 0 and the object is used for Intrinsic Alarming, the alarm never appears via BACnet nor is it visible on the keypad/display, even though it may be an active chiller alarm. See BACnet Intrinsic Alarming for details.
3. Object applies only to AWS application software version 2507500204 or earlier. This point will always read 0 in subsequent versions of the AWS application.
4. If the BACnet Workstation is unable to subscribe to the recipient_list, you can still subscribe to alarms using the unit controller keypad/display. Navigate to the IP Setup or MS/TP Setup menu and enter the Device Instance of the device to receive the alarms in the "NC Dev 1=", "NC Dev 2=" or "NC Dev 3=" entries. You must cycle power to the unit controller after changing these properties via the keypad/display.
5. Maximum of 20 recipients at one time.
6. A lower number indicates a higher priority.
7. Object applies only to AGZ and AMZ chiller models.
8. Object applies only to AWV chiller models.
9. Object applies only to WWV chiller models.
10. Object applies to only AGZ chiller models.
11. Object applies to only AMZ chiller models.

Point Name	Object Type/ Instance	Read/Write Access[1]	BACnet Object Name/Type	Default/Range	Description
INHIBIT LOAD - Condenser Pressure High Circuit #n Problem[3]					
Circuit 1	BV:535	C	C1InhbtLoadCondPressHi	0 = No Alarm 1 = In Alarm	Indicates whether INHIBIT LOAD - Condenser Pressure High Circuit #n Problem is active (1) or not active (0).There is one BACnet object for each circuit.
Circuit 2	BV:536		C2InhbtLoadCondPressHi		
Circuit 3	BV:537		C3InhbtLoadCondPressHi		
Circuit 4	BV:538		C4InhbtLoadCondPressHi		
INHIBIT LOAD - Evap Pressure Low #n Problem[3]					
Circuit 1	BV:556	C	C1InhbtLoadEvapPressLo	0 = No Alarm 1 = In Alarm	Indicates whether INHIBIT LOAD - Evaporator Pressure Low Problem is active (1) or not active (0).There is one BACnet object for each circuit.
Circuit 2	BV:557		C2InhbtLoadEvapPressLo		
Circuit 3	BV:558		C3InhbtLoadEvapPressLo		
Circuit 4	BV:559		C4InhbtLoadEvapPressLo		
Low Pressure Difference or Ratio 1[8]					
	BI:48	C2	C1Cmp1LowPr DiffOrRatio	0 = No Alarm 1 = In Alarm	Indicates whether the Circuit 1 Low Pressure Difference or Ratio fault alarm is normal (0) or in alarm (1).
Low Pressure Difference or Ratio 2[8]					
	BI:49	C2	C2Cmp1LowPr DiffOrRatio	0 = No Alarm 1 = In Alarm	Indicates whether the Circuit 2 Low Pressure Difference or Ratio fault alarm is normal (0) or in alarm (1).
Multistart Fail Compressor 1[8]					
	BI:52	C2	C1Cmp1MultiStartFail	0 = No Alarm 1 = In Alarm	Indicates whether the Circuit 1 Multistart Fail Compressor fault alarm is normal (0) or in alarm (1).
Multistart Fail Compressor 2[8]					
	BI:53	C2	C2Cmp1MultiStartFail	0 = No Alarm 1 = In Alarm	Indicates whether the Circuit 2 Multistart Fail Compressor fault alarm is normal (0) or in alarm (1).
Notification Class - Faults					
	NC:1	R	NC1-Faults4,5 Ack_Required	NA	All faults report to this notification class. The Recipient_List conveys a list of one or more recipients to which notifications will be sent. The Ack_Required property defines whether or not acknowledgment is required for notifications generated due to To-OffNormal, To-Fault, and To-Normal event transitions. The Priority conveys the priority to be used for event notifications to To-OffNormal, To-Fault and To-Normal events. Refer to BACnet Intrinsic Alarming for additional information, including a list of objects that report events to this notification class.
	NC:1		NCI-Faults4,5,6 Priority		
Notification Class - Problems					
	NC:2	R	NC1-Problems4,5 Ack_Required	NA	All problems report to this notification class. These read/ write properties allow subscription to alarm notifications. The Recipient_List conveys a list of one or more recipients to which notifications will be sent. The Ack_Required property defines whether or not acknowledgment is required for notifications generated due to To-OffNormal, To-Fault, and To-Normal event transitions. The Priority conveys the priority to be used for event notifications to To-OffNormal, To-Fault and To-Normal events. Refer to BACnet Intrinsic Alarming for additional information, including a list of objects that report events to this notification class.
	NC:2		NC1-Problems4,5,6 Priority		

1. This column defines whether the Present_Value property of the object is Read Only (R), Read/Write (W), or Commandable (C). Commandable variables are read/ write, but they contain a priority array (1-16). Any priority can be written if the Chiller Unit Controller is communicating via BACnet MS/TP or BACnet IP. However, via LONWORKS and Modbus protocols always write at Priority 8.
2. Although they are commandable, Daikin Applied recommends not writing to these points. If any priority is commanded to a 1 and the object is used for Intrinsic Alarming, the object generates an alarm via BACnet, and the alarm is visible on the unit controller keypad/display, even if the alarm is not present in the chiller. The chiller will continue to function as if the alarm does not exist. If any priority is commanded to a 0 and the object is used for Intrinsic Alarming, the alarm never appears via BACnet nor is it visible on the keypad/display, even though it may be an active chiller alarm. See BACnet Intrinsic Alarming for details.
3. Object applies only to AWS application software version 2507500204 or earlier. This point will always read 0 in subsequent versions of the AWS application.
4. If the BACnet Workstation is unable to subscribe to the recipient_list, you can still subscribe to alarms using the unit controller keypad/display. Navigate to the IP Setup or MS/TP Setup menu and enter the Device Instance of the device to receive the alarms in the “NC Dev 1=”, “NC Dev 2=” or “NC Dev 3=” entries. You must cycle power to the unit controller after changing these properties via the keypad/display.
5. Maximum of 20 recipients at one time.
6. A lower number indicates a higher priority.
7. Object applies only to AGZ and AMZ chiller models.
8. Object applies only to AWV chiller models.
9. Object applies only to WWV chiller models.
10. Object applies to only AGZ chiller models.
11. Object applies to only AMZ chiller models.

Point Name	Object Type/ Instance	Read/Write Access[1]	BACnet Object Name/Type	Default/Range	Description
Notification Class - Warnings					
	NC:3	R	NC1-Warnings4, 5 Ack_Required	NA	All warnings report to this notification class. These read/ write properties allow subscription to alarm notifications. The Recipient_list conveys a list of one or more recipients to which notifications will be sent. The Ack_Required property defines whether or not acknowledgment is required for notifications generated due to To-OffNormal, To-Fault, and To-Normal event transitions. The Priority conveys the priority to be used for event notifications to To-OffNormal, To-Fault and To-Normal events. Refer to BACnet Intrinsic Alarming for additional information, including a list of objects that report events to this notification class.
	NC:3		NC1-Warnings4,5,6 Priority		
PUMP 2 START ATTEMPTED - Evaporator Pump 1 Failure[7]					
	BV:575	C[2]	EvPumpFault1	0 = No Alarm 1 = In Alarm	Indicates whether the PUMP 2 START ATTEMPTED - Evaporator Pump 1 Failure alarm is active (1) or not active (0).
PUMP 1 START ATTEMPTED - Evaporator Pump 2 Failure[7]					
	BV:576	C[2]	EvPumpFault2	0 = No Alarm 1 = In Alarm	Indicates whether the PUMP 1 START ATTEMPTED - Evaporator Pump 2 Failure alarm is active (1) or not active (2).
Rapid Restore Module Communication Failure[10]					
	BI:149	C[2]	RpdRestoreCommFail	0 = No Alarm 1 = In Alarm	Indicates whether the Rapid Restore Module Communication Failure fault alarm is normal (0) or in alarm (1).
Unit Ground Fault Protection[8]					
	BI:40	C2	UnitGroundFault	0 = No Alarm 1 = Alarm	Indicates whether the Unit Ground Fault Protection alarm is normal (0) or in alarm (1).
UNLOAD - Compressor Motor Current High #n Problem[3]					
Circuit 1 Compressor 1	BV:565	C	C1Cmp1UnloadAmpsHi	0 = No Alarm 1 = In Alarm	Indicates whether UNLOAD - Compressor Motor Current High #n Problem is active (1) or not active (0) There is one BACnet object for each compressor.
Circuit 2 Compressor 1	BV:567		C2Cmp1UnloadAmpsHi		
Circuit 3 Compressor 1	BV:569		C3Cmp1UnloadAmpsHi		
UNLOAD - Condenser Pressure High #n Problem[3]					
Circuit 1	BV:540	C	C1UnloadCondPressHi	0 = No Alarm 1 = In Alarm	Indicates whether UNLOAD - Condenser Pressure High #n Problem is active (1) or not active (0).There is one BACnet object for each circuit.
Circuit 2	BV:541		C2UnloadCondPressHi		
Circuit 3	BV:542		C3UnloadCondPressHi		
Circuit 4	BV:543		C4UnloadCondPressHi		
UNIT SHUTDOWN - Condenser LWT or EWT Low (Freeze)[9]					
	BV:22	C	UnitOffCndLvgWTempSen/ UnitOffCndEntWTempSen	0 = No Alarm 1 = In Alarm	Indicates whether the UNIT SHUITDOWN - Condenser LWT or EWT Low (Freeze) alarm is active (1) or not active (0)
UNIT SHUTDOWN - Evaportator Leaving Water Temperature Sensor Fault					
	BV:748	C[2]	UnitOFFEvapLvgWTempSen	0 = No Alarm 1 = In Alarm	Indicates whether the UNIT SHUTDOWN - Evaporator Leaving Water Temperature Sensor Fault is active (1) or inactive (2).
UNIT SHUTDOWN - Evaporator Leaving Water Temperature Sensor Fault					
	AI: 2	C[2]	LvgEvapWaterTempUnit	0 = No Alarm 1 = In Alarm	Indicates whether the UNIT SHUTDOWN - Evaporator Leaving Water Temperature Sensor Fault is active (1) or inactive (2).

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2. Although they are commandable, Daikin Applied recommends not writing to these points. If any priority is commanded to a 1 and the object is used for Intrinsic Alarming, the object generates an alarm via BACnet, and the alarm is visible on the unit controller keypad/display, even if the alarm is not present in the chiller. The chiller will continue to function as if the alarm does not exist. If any priority is commanded to a 0 and the object is used for Intrinsic Alarming, the alarm never appears via BACnet nor is it visible on the keypad/display, even though it may be an active chiller alarm. See BACnet Intrinsic Alarming for details.
3. Object applies only to AWS application software version 2507500204 or earlier. This point will always read 0 in subsequent versions of the AWS application.
4. If the BACnet Workstation is unable to subscribe to the recipient_list, you can still subscribe to alarms using the unit controller keypad/display. Navigate to the IP Setup or MS/TP Setup menu and enter the Device Instance of the device to receive the alarms in the “NC Dev 1=”, “NC Dev 2=” or “NC Dev 3=” entries. You must cycle power to the unit controller after changing these properties via the keypad/display.
5. Maximum of 20 recipients at one time.
6. A lower number indicates a higher priority.
7. Object applies only to AGZ and AMZ chiller models.
8. Object applies only to AWV chiller models.
9. Object applies only to WWV chiller models.
10. Object applies to only AGZ chiller models.
11. Object applies to only AMZ chiller models.

Point Name	Object Type/ Instance	Read/Write Access[1]	BACnet Object Name/Type	Default/Range	Description
UNIT SHUTDOWN - Evaporator LWT or EWT Low (Freeze)					
	BV:702	C	UnitOffEvpLvgWTempSen/ UnitEvapWaterTempSen	0 = No Alarm 1 = In Alarm	Indicates whether the UNIT SHUTDOWN - Evaporator LWT or EWT Low (Freeze) alarm is active (1) or not active (0).
UNLOAD - Evap Pressure Low #n Problem[3]					
Circuit 1	BV:561	C	C1UnloadEvapPressLow	0 = No Alarm 1 = In Alarm	Indicates whether UNLOAD - Evaporator Pressure Low #n Problem is active (1) or not active (0). There is one BACnet point for each circuit. Circuit 2
	BV:562		C2UnloadEvapPressLow		
Circuit 2	BV:563		C3UnloadEvapPressLow		
Circuit 3	BV:564		C4UnloadEvapPressLow		

1. This column defines whether the Present_Value property of the object is Read Only (R), Read/Write (W), or Commandable (C). Commandable variables are read/write, but they contain a priority array (1-16). Any priority can be written if the Chiller Unit Controller is communicating via BACnet MS/TP or BACnet IP. However, via LONWORKS and Modbus protocols always write at Priority 8.
2. Although they are commandable, Daikin Applied recommends not writing to these points. If any priority is commanded to a 1 and the object is used for Intrinsic Alarming, the object generates an alarm via BACnet, and the alarm is visible on the unit controller keypad/display, even if the alarm is not present in the chiller. The chiller will continue to function as if the alarm does not exist. If any priority is commanded to a 0 and the object is used for Intrinsic Alarming, the alarm never appears via BACnet nor is it visible on the keypad/display, even though it may be an active chiller alarm. See BACnet Intrinsic Alarming for details.
3. Object applies only to AWS application software version 2507500204 or earlier. This point will always read 0 in subsequent versions of the AWS application.
4. If the BACnet Workstation is unable to subscribe to the recipient_list, you can still subscribe to alarms using the unit controller keypad/display. Navigate to the IP Setup or MS/TP Setup menu and enter the Device Instance of the device to receive the alarms in the “NC Dev 1=”, “NC Dev 2=” or “NC Dev 3=” entries. You must cycle power to the unit controller after changing these properties via the keypad/display.
5. Maximum of 20 recipients at one time.
6. A lower number indicates a higher priority.
7. Object applies only to AGZ and AMZ chiller models.
8. Object applies only to AWV chiller models.
9. Object applies only to WWV chiller models.
10. Object applies to only AGZ chiller models.
11. Object applies to only AMZ chiller models.

BACnet Alarm Codes

This section provides a comprehensive description of all alarm codes supported by the Chiller Unit Controller. Table 13 – Table 15 display details for each of the three alarm types: Warning, Problem, and Faults.

Table 13: BACnet Warning Alarms

Warning Alarm Code			
Object Type/Instance	**Read/Write Access**	**BACnet Object Name**	**Description**
AV:903	R	AVWarningAlarmCode	This object allows individual notification of the active warning alarm. The alarms are not ordered based on any priority. *If multiple warning alarms are present at one time, this object will be set to the alarm that has the highest alarm code*. This object is set to zero if no warning alarms are active.
Alarm Code	**Description**	**Alarm Code**	**Description**
0	No Alarms	4128	Low Refrigerant Charge – Circuit 1
513	Evaporator Entering Water Temperature Sensor Warning	4160	Low Refrigerant Charge – Circuit 2
2049	Bad Setpoint Override Input	4192	Low Refrigerant Charge – Circuit 3
2305	Bad Demand Limit Input	4352	Chiller Network Communication Failure
2817	Unit Power Restore	6177	Economizer Refrigerant Pressure Sensor Fault 1
3105	Circuit 1 Failed Pumpdown	6209	Economizer Refrigerant Pressure Sensor Fault 2
3137	Circuit 2 Failed Pumpdown	6433	Economizer Temperature Sensor Fault 1
3169	Circuit 3 Failed Pumpdown	6465	Economizer Temperature Sensor Fault 2
3201	Circuit 4 Failed Pumpdown	6945	DC Fan Fault 1
3329	External Event	6977	DC Fan Fault 2
3585	Bad Current Limit Input	7169	Economizer EXV Comm Failure
3841	Option Controller Communication Failed	54273	Rapid Restore Module Communication Failure
53285	Compressor 1 IGV Position Warning	62721	Unit Low Source Temperature Warning
53289	Compressor 2 IGV Position Warning		
53541	Compressor 1 VFD Overheat Warning		
53545	Compressor 2 VFD Overheat Warning		

Table 14: BACnet Problem Alarms

Problem Alarm Code			
Object Type/Instance	**Read/Write Access**	**BACnet Object Name**	**Description**
AV:904	R	AVProblemAlarmCode	This object allows individual notification of the active problem alarm. The alarms are not ordered based on any priority. If multiple problem alarms are present at one time, this object will be set to the alarm that has the highest alarm code. This object is set to zero if no problem alarms are active.
Alarm Code	**Description**	**Alarm Code**	**Description**
0	No Alarms	19522	INHIBIT LOAD - Evaporator Pressure Low Circuit 2
16418	RESTART DELAYED - Power Loss While Running Circuit 1	19554	INHIBIT LOAD - Evaporator Pressure Low Circuit 3
16450	RESTART DELAYED - Power Loss While Running Circuit 2	19586	INHIBIT LOAD - Evaporator Pressure Low Circuit 4
16482	RESTART DELAYED - Power Loss While Running Circuit 3	20002	UNLOAD - Evaporator Pressure Low Circuit 1
16514	RESTART DELAYED - Power Loss While Running Circuit 4	20034	UNLOAD - Evaporator Pressure Low Circuit 2
16642	START INHIBITED - Ambient Temperature Low	20066	UNLOAD - Evaporator Pressure Low Circuit 3
16898	INHIBIT LOAD - Condenser Pressure High	20098	UNLOAD - Evaporator Pressure Low Circuit 4
17186	INHIBIT LOAD - Condenser Pressure High Circuit 1	20262	UNLOAD - Comp Motor Current High Circuit 1, Comp 1
17218	INHIBIT LOAD - Condenser Pressure High Circuit 2	20294	UNLOAD - Comp Motor Current High Circuit 2, Comp 1
17250	INHIBIT LOAD - Condenser Pressure High Circuit 3	20326	UNLOAD - Comp Motor Current High Circuit 3, Comp 1
17282	INHIBIT LOAD - Condenser Pressure High Circuit 4	20738	PUMP 2 START ATTEMPTED - Evaporator Pump 1 Failure
17698	UNLOAD - Condenser Pressure High Circuit 1	20994	PUMP 1 START ATTEMPTED - Evaporator Pump 2 Failure
17730	UNLOAD - Condenser Pressure High Circuit 2	21542	INHIBIT LOAD - Comp Motor Current High Circuit 1, Comp 1
17762	UNLOAD - Condenser Pressure High Circuit 3	21574	INHIBIT LOAD - Comp Motor Current High Circuit 2, Comp 1
17794	UNLOAD - Condenser Pressure High Circuit 4	21606	INHIBIT LOAD - Comp Motor Current High Circuit 3, Comp 1
17954	CONDENSER PUMP ON - Condenser Water Freeze Protection	60674	Waterside Economizer Valve Problem
18178	PUMP #2 START ATTEMPTED - Condenser Pump #1 Failure	60930	Waterside Economizer EWT Sensor Failure
18434	PUMP #1 START ATTEMPTED - Condenser Pump #2 Failure		
19490	INHIBIT LOAD - Evaporator Pressure Low Circuit 1		
20514	EVAPORATOR PUMP ON - Evaporator Water Freeze Protection		

Table 15: BACnet Fault Alarms

Fault Alarm Code			
Object Type/Instance	**Read/Write Access**	**BACnet Object Name**	**Description**
AV:905	R	AVFaultAlarmCode	This object allows individual notification of the active problem alarm. The alarms are not ordered based on any priority. If multiple fault alarms are present at one time, this object will be set to the alarm that has the highest alarm code. This object is set to zero if no problem alarms are active.

Alarm Code	Description
0	No Alarms
1027	Condenser Leaving Water Temperature Sensor Failure
5159	Compressor 1 IGV Position Failure
5163	Compressor 2 IGV Position Failure
7427	Unit Ground Fault Protection
7683	Circuit 1 Ground Fault Protection
7939	Circuit 2 Ground Fault Protection
8195	Evaporator EXV Comm Failure
8451	DC Fan Controller Comm Failure
8743	Low Pressure Difference or Ratio 1
8775	Low Pressure Difference or Ratio 2
8999	Multistart Fail Compressor 1
9031	Multistart Fail Compressor 2
9255	Evaporator EXV Motor Error 1
9287	Evaporator EXV Motor Error 2
9511	Compressor VFD Current High 1
9543	Compressor VFD Current High 2
24615	COMPRESSOR SHUTDOWN - Comp 1 Stator Temperature1 Sensor Fault
24619	COMPRESSOR SHUTDOWN - Comp 2 Stator Temperature1 Sensor Fault
24871	COMPRESSOR SHUTDOWN - Comp 1 Stator Temperature2 Sensor Fault
24875	COMPRESSOR SHUTDOWN - Comp 2 Stator Temperature2 Sensor Fault
25127	COMPRESSOR SHUTDOWN - Comp 1 Stator Temperature3 Sensor Fault
25131	COMPRESSOR SHUTDOWN - Comp 2 Stator Temperature3 Sensor Fault
25383	COMPRESSOR SHUTDOWN - Comp 1 Motor Gap Temperature Sensor Fault
25387	COMPRESSOR SHUTDOWN - Comp 2 Motor Gap Temperature Sensor Fault
25639	COMPRESSOR SHUTDOWN - Comp 1 Motor Case Temperature Sensor Fault
25643	COMPRESSOR SHUTDOWN - Comp 2 Motor Case Temperature Sensor Fault
25895	COMPRESSOR SHUTDOWN - Comp 1 Rotor Pump Temperature Sensor Fault
25899	COMPRESSOR SHUTDOWN - Comp 2 Rotor Pump Temperature Sensor Fault
26151	COMPRESSOR SHUTDOWN - Comp 1 Discharge Pressure Sensor Fault
26155	COMPRESSOR SHUTDOWN - Comp 2 Discharge Pressure Sensor Fault
26407	COMPRESSOR SHUTDOWN - Comp 1 Suction Pressure Low
26411	COMPRESSOR SHUTDOWN - Comp 2 Suction Pressure Low
26663	COMPRESSOR SHUTDOWN - Comp 1 Discharge Pressure High
26667	COMPRESSOR SHUTDOWN - Comp 2 Discharge Pressure High
26919	COMPRESSOR SHUTDOWN - Comp 1 Compressor Does Not Start
26923	COMPRESSOR SHUTDOWN - Comp 2 Compressor Does Not Start
27175	COMPRESSOR SHUTDOWN - Comp 1 Stator Temperature High
27179	COMPRESSOR SHUTDOWN - Comp 2 Stator Temperature High
27431	COMPRESSOR SHUTDOWN - Comp 1 Motor Gap Temperature High
27435	COMPRESSOR SHUTDOWN - Comp 2 Motor Gap Temperature High
27687	COMPRESSOR SHUTDOWN - Comp 1 Low Rotor Pump Superheat
27691	COMPRESSOR SHUTDOWN - Comp 2 Low Rotor Pump Superheat
27943	COMPRESSOR SHUTDOWN - Comp 1 Surge Temperature
27947	COMPRESSOR SHUTDOWN - Comp 2 Surge Temperature

Alarm Code	Description
28199	COMPRESSOR SHUTDOWN - Comp 1 Motor Speed Fail
28203	COMPRESSOR SHUTDOWN - Comp 2 Motor Speed Fail
28455	COMPRESSOR SHUTDOWN - Comp 1 Compressor Did Not Stop
28459	COMPRESSOR SHUTDOWN - Comp 2 Compressor Did Not Stop
28711	COMPRESSOR SHUTDOWN - Comp 1 MBC Fault
28715	COMPRESSOR SHUTDOWN - Comp 2 MBC Fault
28967	COMPRESSOR SHUTDOWN - Comp 1 IGV Driver Fault
28971	COMPRESSOR SHUTDOWN - Comp 2 IGV Driver Fault
29223	COMPRESSOR SHUTDOWN - Comp 1 IGV Calibration Fault
29227	COMPRESSOR SHUTDOWN - Comp 2 IGV Calibration Fault
29479	COMPRESSOR SHUTDOWN - Comp 1 Enable Relay Off Fault
29483	COMPRESSOR SHUTDOWN - Comp 2 Enable Relay Off Fault
29735	COMPRESSOR SHUTDOWN - Comp 1 MBC Modbus Communication Fault
29739	COMPRESSOR SHUTDOWN - Comp 2 MBC Modbus Communication Fault
29991	COMPRESSOR SHUTDOWN - Comp 1 VFD Modbus Communication Fault
29995	COMPRESSOR SHUTDOWN - Comp 2 VFD Modbus Communication Fault
30247	COMPRESSOR SHUTDOWN - Comp 1 MBC Orbit Error
30251	COMPRESSOR SHUTDOWN - Comp 2 MBC Orbit Error
30503	COMPRESSOR SHUTDOWN - Comp 1 Primary Power Fail
30507	COMPRESSOR SHUTDOWN - Comp 2 Primary Power Fail
30759	COMPRESSOR SHUTDOWN - Comp 1 IPS Over Temperature
30763	COMPRESSOR SHUTDOWN - Comp 2 IPS Over Temperature
31015	COMPRESSOR SHUTDOWN - Comp 1 Suction Pressure Sensor Fault
31019	COMPRESSOR SHUTDOWN - Comp 2 Suction Pressure Sensor Fault
32551	COMP SHUTDOWN - Low Pressure Ratio Circuit 1, Comp 1
32583	COMP SHUTDOWN - Low Pressure Ratio Circuit 2, Comp 1
32615	COMP SHUTDOWN - Low Pressure Ratio Circuit 3, Comp 1
32647	COMP SHUTDOWN - Low Pressure Ratio Circuit 4, Comp 1
32771	COMP SHUTDOWN - Outside Air Temp Sensor Fault
33063	COMP SHUTDOWN - Current Overload Trip Circuit 1, Comp 1
33095	COMP SHUTDOWN - Current Overload Trip Circuit 2, Comp 1
33127	COMP SHUTDOWN - Current Overload Trip Circuit 3, Comp 1
33575	COMPRESSOR SHUTDOWN - Comp 1 Low Motor Current
33579	COMPRESSOR SHUTDOWN - Comp 2 Low Motor Current
34083	CIRCUIT SHUTDOWN - Motor Protector Trip Circuit 1
34087	COMP SHUTDOWN - Motor Protector Trip Circuit 1 Comp 1
34119	COMP SHUTDOWN - Motor Protector Trip Circuit 2 Comp 1
34599	COMP SHUTDOWN - Motor Temp High Circuit 1, Comp 1
34631	COMP SHUTDOWN - Motor Temp High Circuit 2, Comp 1
34663	COMP SHUTDOWN - Motor Temp High Circuit 3, Comp 1
34695	COMP SHUTDOWN - Motor Temp High Circuit 4, Comp 1
34855	COMP SHUTDOWN - Motor Temp Sensor Fault Circuit 1, Comp 1
34887	COMP SHUTDOWN - Motor Temp Sensor Fault Circuit 2, Comp 1
34887	COMP SHUTDOWN - Motor Temp Sensor Fault Circuit 2, Comp 1
34919	COMP SHUTDOWN - Motor Temp Sensor Fault Circuit 3, Comp 1
34919	COMP SHUTDOWN - Motor Temp Sensor Fault Circuit 3, Comp 1
34951	COMP SHUTDOWN - Motor Temp Sensor Fault Circuit 4, Comp 1
35623	COMPRESSOR SHUTDOWN - Overvoltage #1
35655	COMPRESSOR SHUTDOWN - Overvoltage #2
35879	COMPRESSOR SHUTDOWN - Undervoltage #1
35911	COMPRESSOR SHUTDOWN - Undervoltage #2
36387	CIRCUIT SHUTDOWN - Condenser Pressure Sensor Circuit 1 Fault
36391	COMP SHUTDOWN - Condenser Pressure Sensor Fault Circuit 1, Comp 1

Alarm Code	Description
36419	CIRCUIT SHUTDOWN - Condenser Pressure Sensor Circuit 2 Fault
36423	COMP SHUTDOWN - Condenser Pressure Sensor Fault Circuit 2, Comp 1
36455	COMP SHUTDOWN - Condenser Pressure Sensor Fault Circuit 3, Comp 1
36487	COMP SHUTDOWN - Condenser Pressure Sensor Fault Circuit 4, Comp 1
36611	COMPRESSOR SHUTDOWN - Condenser Water Flow Loss
37155	CIRCUIT SHUTDOWN - Condenser Pressure High Trip Circuit 1 Fault
37159	COMP SHUTDOWN - Condenser Pressure High Circuit 1, Comp 1
37187	CIRCUIT SHUTDOWN - Condenser Pressure High Trip Circuit 2 Fault
37191	COMP SHUTDOWN - Condenser Pressure High Circuit 2, Comp 1
37223	COMP SHUTDOWN - Condenser Pressure High Circuit 3, Comp 1
37255	COMP SHUTDOWN - Condenser Pressure High Circuit 4, Comp 1
37671	COMP SHUTDOWN - Discharge Temp Sensor Fault Circuit 1, Comp 1
37675	COMPRESSOR SHUTDOWN - Comp 2 Discharge Temperature Sensor Fault
37703	COMP SHUTDOWN - Discharge Temp Sensor Fault Circuit 2, Comp 1
37735	COMP SHUTDOWN - Discharge Temp Sensor Fault Circuit 3, Comp 1
37767	COMP SHUTDOWN - Discharge Temp Sensor Fault Circuit 4, Comp 1
37927	COMP SHUTDOWN - Discharge Temp High Circuit 1, Comp 1
37959	COMP SHUTDOWN - Discharge Temp High Circuit 2, Comp 1
37991	COMP SHUTDOWN - Discharge Temp High Circuit 3, Comp 1
38023	COMP SHUTDOWN - Discharge Temp High Circuit 4, Comp 1
38147	UNIT SHUTDOWN - Condenser Entering Water Temperature Sensor Fault
38403	UNIT SHUTDOWN - Evaporator Water Flow Loss
38659	UNIT SHUTDOWN - Evaporator LWT or EWT Low (Freeze)
38915	COMP SHUTDOWN - Evaporator Pressure Low
39203	CIRCUIT SHUTDOWN - Low Evaporator Pressure Trip Circuit 1 Fault
39207	COMP SHUTDOWN - Evaporator Pressure Low Circuit 1, Comp 1
39235	CIRCUIT SHUTDOWN - Low Evaporator Pressure Trip Circuit 2 Fault
39239	COMP SHUTDOWN - Evaporator Pressure Low Circuit 2, Comp 1
39271	COMP SHUTDOWN - Evaporator Pressure Low Circuit 3, Comp 1
39303	COMP SHUTDOWN - Evaporator Pressure Low Circuit 4, Comp 1
39715	CIRCUIT SHUTDOWN - Evaporator Pressure Sensor Circuit 1 Fault
39719	COMP SHUTDOWN - Evaporator Pressure Sensor Fault Circuit 1, Comp 1
39747	CIRCUIT SHUTDOWN - Evaporator Pressure Sensor Circuit 2 Fault
39751	COMP SHUTDOWN - Evaporator Pressure Sensor Fault Circuit 2, Comp 1
39783	COMP SHUTDOWN - Evaporator Pressure Sensor Fault Circuit 3, Comp 1
39815	COMP SHUTDOWN - Evaporator Pressure Sensor Fault Circuit 4, Comp 1
40231	COMPRESSOR SHUTDOWN - Comp 1 Lift Pressure Low
40235	COMPRESSOR SHUTDOWN - Comp 2 Lift Pressure Low
40739	COMPRESSOR SHUTDOWN - Liquid Line Temperature Sensor Fault
41251	CIRCUIT SHUTDOWN - Number of Compressor Re-Starts Exceeded Circuit 1
41255	COMP LOCKOUT - Number of Allowed Re-Starts Exceeded Circuit 1, Comp 1
41287	COMP LOCKOUT - Number of Allowed Re-Starts Exceeded Circuit 2, Comp 1
41319	COMP LOCKOUT - Number of Allowed Re-Starts Exceeded Circuit 3, Comp 1
41351	COMP LOCKOUT - Number of Allowed Re-Starts Exceeded Circuit 4, Comp 1
41475	UNIT SHUTDOWN - Evaporator Leaving Water Temp Sensor Fault
41731	UNIT SHUTDOWN - Evaporator Entering Water Temp Sensor Failure
42531	CIRCUIT SHUTDOWN - Mechanical High Pressure Alarm Circuit 1
42535	COMP SHUTDOWN - Mechanical High Pressure Trip Circuit 1, Comp 1
42567	COMP SHUTDOWN - Mechanical High Pressure Trip Circuit 2, Comp 1
42599	COMP SHUTDOWN - Mechanical High Pressure Trip Circuit 3, Comp 1
42631	COMP SHUTDOWN - Mechanical High Pressure Trip Circuit 4, Comp 1
44327	COMP SHUTDOWN - Oil Feed Pressure Sensor Fault Circuit 1, Comp 1
44359	COMP SHUTDOWN - Oil Feed Pressure Sensor Fault Circuit 2, Comp 1
44391	COMP SHUTDOWN - Oil Feed Pressure Sensor Fault Circuit 3, Comp 1
44423	COMP SHUTDOWN - Oil Feed Pressure Sensor Fault Circuit 4, Comp 1
45059	SHUTDOWN - Phase Voltage Protection
45351	COMP SHUTDOWN - Starter Fault Comp Circuit 1, Comp 1
45383	COMP SHUTDOWN - Starter Fault Comp Circuit 2, Comp 1
45415	COMP SHUTDOWN - Starter Fault Comp Circuit 3, Comp 1
45447	COMP SHUTDOWN - Starter Fault Comp Circuit 4, Comp 1
46883	CIRCUIT SHUTDOWN - Suction Temperature Sensor Fault Circuit 1
46887	COMP SHUTDOWN - Suction Temp Sensor Fault Circuit 1, Comp 1
46919	COMP SHUTDOWN - Suction Temp Sensor Fault Circuit 2, Comp 1
46951	COMP SHUTDOWN - Suction Temp Sensor Fault Circuit 3, Comp 1
46983	COMP SHUTDOWN - Suction Temp Sensor Fault Circuit 4, Comp 1
47911	COMP SHUTDOWN - Mechanical Low Pressure Trip Circuit 1, Comp 1
47943	COMP SHUTDOWN - Mechanical Low Pressure Trip Circuit 2, Comp 1
47975	COMP SHUTDOWN–Mechanical Low Pressure Trip Circuit 3, Comp 1
48007	COMP SHUTDOWN - Mechanical Low Pressure Trip Circuit 4, Comp 1
48131	Unit Controller Offline
48163	Compressor Controller Communication Failed - Circuit #1
48163	EXV Controller Communication Failed - Circuit #1
48163	Controller Board Offline Circuit 1
48195	Compressor Controller Communication Failed - Circuit #2
48195	EXV Controller Communication Failed - Circuit #2
48195	Controller Board Offline Circuit 2
48227	Controller Board Offline Circuit 3
48259	Controller Board Offline Circuit 4
48419	COMP SHUTDOWN - No Pressure Change After Start Circuit 1
48451	COMP SHUTDOWN - No Pressure Change After Start Circuit 2
48483	COMP SHUTDOWN–No Pressure Change After Start Circuit 3
48515	COMP SHUTDOWN - No Pressure Change After Start Circuit 4
48675	COMP SHUTDOWN - No Pressure at Startup Circuit 1
48707	COMP SHUTDOWN - No Pressure at Startup Circuit 2
48739	COMP SHUTDOWN - No Pressure at Startup Circuit 3
48771	COMP SHUTDOWN - No Pressure at Startup Circuit 4
48935	COMP SHUTDOWN - Slide position sensor fault Circuit 1, Comp 1

Alarm Code	Description
48967	COMP SHUTDOWN - Slide position sensor fault Circuit 2, Comp 1
48999	COMP SHUTDOWN - Slide position sensor fault Circuit 3, Comp 1
49031	COMP SHUTDOWN - Slide position sensor fault Circuit 4, Comp 1
49155	UNIT STOP - Emergency Stop Alarm
49411	UNIT STOP - Evaporator Water Temps Inverted
49667	UNIT STOP - External Alarm
49923	Evaporator Leaving Water Temp 1 Sensor Fault
50179	Evaporator Leaving Water Temp 2 Sensor Fault
50435	CIRCUIT SHUTDOWN - Evaporator 1 Freeze Protection
50691	CIRCUIT SHUTDOWN - Evaporator 2 Freeze Protection
50983	COMP SHUTDOWN - COMP VFD Fault Circuit 1, Comp 1
51015	COMP SHUTDOWN - COMP VFD Fault Circuit 2, Comp 1
51047	COMP SHUTDOWN - COMP VFD Fault Circuit 3, Comp 1
51239	COMP SHUTDOWN - COMP VFD Over Heat Fault Circuit 1, Comp 1
51271	COMP SHUTDOWN - COMP VFD Over Heat Fault Circuit 2, Comp 1
51303	COMP SHUTDOWN - COMP VFD Over Heat Fault Circuit 3, Comp 1
51495	COMP SHUTDOWN - COM ERROR With COMP VFD Circuit 1, Comp 1
51527	COMP SHUTDOWN - COM ERROR With COMP VFD Circuit 2, Comp 1
51559	COMP SHUTDOWN - COM ERROR With COMP VFD Circuit 3, Comp 1

Alarm Code	Description
51751	COMP SHUTDOWN - Low Discharge Superheat Circuit 1, Comp 1
51783	COMP SHUTDOWN - Low Discharge Superheat Circuit 2, Comp 1
51815	COMP SHUTDOWN - Low Discharge Superheat Circuit 3, Comp 1
58371	UNIT STOP - PVM GFP Fault
58403	CIRCUIT SHUTDOWN - PVM GFP Circuit 1 Fault
58435	CIRCUIT SHUTDOWN - PVM GFP Circuit 2 Fault
58915	COMP SHUTDOWN - Refrig Charge Circuit 1
58947	COMP SHUTDOWN - Refrig Charge Circuit 2
58979	COMP SHUTDOWN - Refrig Charge Circuit 3
59427	CIRCUIT SHUTDOWN - VFD Control Card High Temperature #1
59459	CIRCUIT SHUTDOWN - VFD Control Card High Temperature #2
59651	UNIT SHUTDOWN - Condenser LWT or EWT Low (Freeze)
59939	CIRCUIT SHUTDOWN - Motor Earth Fault #1
59971	CIRCUIT SHUTDOWN - Motor Earth Fault #2
60195	CIRCUIT SHUTDOWN - Motor PVM Fault #1
60227	CIRCUIT SHUTDOWN - Motor PVM Fault #2
60451	CIRCUIT SHUTDOWN - Mains PVM Fault #1
60483	CIRCUIT SHUTDOWN - Mains PVM Fault #2
61187	Water Side Economizer Valve Fault
61477	CIRCUIT SHUTDOWN - Oil Feed Loss Circuit 1, Compressor 1
61509	CIRCUIT SHUTDOWN - Oil Feed Loss Circuit 2, Compressor 1

BACnet Alarm Indices

This section provides a comprehensive description of all BACnet alarm indices supported by the Chiller Unit Controller. Table 16 – Table 18 display details for each of the three alarm types: Warning, Problem, and Faults.

Table 16: BACnet Warning Alarm Index

Warning Alarm Index			
Object Type/Instance	**Read/Write Access**	**BACnet Object Name**	**Description**
AV:902	R	AVWarningAlarm	This object allows individual notification of the active warning alarm. The alarms are not ordered based on any priority. If multiple warning alarms are present at one time, this object will be set to the alarm that has the highest alarm index. This object is set to zero if no warning alarms are active.
Alarm Code	**Description**	**Alarm Code**	**Description**
0	No Alarms	15	Option Controller Communication Failed
2	Evaporator Entering Water Temperature Sensor Warning	16	Low Refrigerant Charge - Circuit #n
8	Bad Setpoint Override Input	17	Chiller Network Communication Failure
9	Bad Demand Limit Input	24	Economizer Refrigerant Pressure Sensor Fault #n
11	Unit Power Restore	25	Economizer Temperature Sensor Fault #n
12	Circuit Failed Pumpdown	27	DC Fan Fault #n
13	External Event	28	Economizer EXV Comm Failure
14	Bad Current Limit Input	212	Rapid Restore Module Communication Failure
208	IGV Position Warning #n	245	Unit Low Source Temperature Warning
209	VFD Overheat Warning #n		

Table 17: BACnet Problem Alarm Index

Problem Alarm Index			
Object Type/Instance	**Read/Write Access**	**BACnet Object Name**	**Description**
AV:900	R	AVProblemAlarm	This object allows individual notification of the active problem alarm. The alarms are not ordered based on any priority. If multiple problem alarms are present at *one time, this object will be set to the alarm that has the highest alarm index.* This object is set to zero if no problem alarms are active.
Alarm Code	**Description**	**Alarm Code**	**Description**
0	No Alarms	78	UNLOAD - Evaporator Pressure Low Circuit #n
64	RESTART DELAYED - Power Loss While Running Circuit #n	79	UNLOAD - Comp Motor Current High Circuit #n, Comp #n
65	START INHIBITED - Ambient Temperature Low	81	PUMP 2 START ATTEMPTED - Evaporator Pump 1 Failure
67	INHIBIT LOAD - Condenser Pressure High Circuit #n	82	PUMP 1 START ATTEMPTED - Evaporator Pump 2 Failure
69	UNLOAD - Condenser Pressure High Circuit #n	84	INHIBIT LOAD - Comp Motor Current High Circuit #n, Comp #n
70	CONDENSER PUMP ON - Condenser Water Freeze Protection #n	237	Water Side Economizer Valve Problem
71	PUMP #2 START ATTEMPTED - Condenser Pump #1 Failure	238	Water Side Economizer EWT Sensor Failure
72	PUMP #1 START ATTEMPTED - Condenser Pump #2 Failure		
76	INHIBIT LOAD - Evaporator Pressure Low Circuit #n		
80	EVAPORATOR PUMP ON - Evaporator Water Freeze Protection Comp #		

Table 18: BACnet Fault Alarm Index

Fault Alarm Index			
Object Type/Instance	**Read/Write Access**	**BACnet Object Name**	**Description**
AV:901	R	AVFaultAlarm	This object allows individual notification of the active fault alarm. The alarms are not ordered based on any priority. If multiple fault *alarms are present at one time, this object will be set to the alarm that has the highest alarm index*. This object is set to zero if no fault alarms are active.

Alarm Code	Description
0	No Alarms
4	Condenser Leaving Water Temperature Sensor Failure
20	IGV Position Failure
29	Unit Ground Fault Protection
30	Circuit 1 Ground Fault Protection
31	Circuit 2 Ground Fault Protection
32	Evaporator EXV Comm Failure
33	DC Fan Controller Comm Failure
34	Low Pressure Difference or Ratio #n
35	Multistart Fail Compressor #n
36	Evaporator EXV Motor Error #n
37	Compressor VFD Current High #n
96	COMPRESSOR SHUTDOWN - Stator Temperature1 Sensor Fault
97	COMPRESSOR SHUTDOWN - Stator Temperature2 Sensor Fault
98	COMPRESSOR SHUTDOWN - Stator Temperature3 Sensor Fault
99	COMPRESSOR SHUTDOWN - Motor Gap Temperature Sensor Fault
100	COMPRESSOR SHUTDOWN - Motor Case Temperature Sensor Fault
101	COMPRESSOR SHUTDOWN - Rotor Pump Temperature Sensor Fault
102	COMPRESSOR SHUTDOWN - Discharge Pressure Sensor Fault
103	COMPRESSOR SHUTDOWN - Suction Pressure Low
104	COMPRESSOR SHUTDOWN - Discharge Pressure High
105	COMPRESSOR SHUTDOWN - Compressor Does Not Start
106	COMPRESSOR SHUTDOWN - Stator Temperature High
107	COMPRESSOR SHUTDOWN - Motor Gap Temperature High
108	COMPRESSOR SHUTDOWN - Low Rotor Pump Superheat
109	COMPRESSOR SHUTDOWN - Surge Temperature
110	COMPRESSOR SHUTDOWN - Motor Speed Fail
111	COMPRESSOR SHUTDOWN - Compressor Did Not Stop
112	COMPRESSOR SHUTDOWN - MBC Fault
113	COMPRESSOR SHUTDOWN - IGV Driver Fault
114	COMPRESSOR SHUTDOWN - IGV Calibration Fault
115	COMPRESSOR SHUTDOWN - Enable Relay Off Fault
116	COMPRESSOR SHUTDOWN - MBC Modbus Communication Fault
117	COMPRESSOR SHUTDOWN - VFD Modbus Communication Fault
118	COMPRESSOR SHUTDOWN - MBC Orbit Error
119	COMPRESSOR SHUTDOWN - Primary Power Fail
120	COMPRESSOR SHUTDOWN - IPS Over Temperature
121	COMPRESSOR SHUTDOWN - Suction Pressure Sensor Fault
127	COMP SHUTDOWN - Low pressure ratio #n
128	COMP SHUTDOWN - Outside Air Temp Sensor Fault
129	“COMP SHUTDOWN - Current Overload Trip Circuit #n, Comp #n”
131	COMPRESSOR SHUTDOWN - Low Motor Current #n
133	CIRCUIT SHUTDOWN - Motor Protector Trip Circuit #n
135	COMP SHUTDOWN - Motor Temp High Circuit #n
136	COMP SHUTDOWN - Motor Temp Sensor Fault #n
139	COMPRESSOR SHUTDOWN - Overvoltage #n
140	COMPRESSOR SHUTDOWN - Undervoltage #n
142	COMP or CIRCUIT SHUTDOWN - Condenser Pressure Sensor Fault #n

Alarm Code	Description
143	COMPRESSOR SHUTDOWN - Condenser Water Flow Loss
145	COMP or CIRCUIT SHUTDOWN - Condenser Pressure High #n
147	COMP SHUTDOWN - Discharge Temp Sensor Fault #n
148	COMP SHUTDOWN - Discharge Temp High #n
149	UNIT SHUTDOWN - Condenser Entering Water Temperature Sensor Fault
150	UNIT SHUTDOWN - Evaporator Water Flow Loss
151	UNIT SHUTDOWN - Evaporator LWT or EWT Low (Freeze)
153	COMP or CIRCUIT SHUTDOWN - Evaporator Pressure Low #n
155	COMP or CIRCUIT SHUTDOWN - Evaporator Pressure Sensor Fault #n
157	COMPRESSOR SHUTDOWN - Lift Pressure Low #n
159	COMPRESSOR SHUTDOWN - Liquid Line Temperature Sensor Fault #n
161	COMP OR CIRCUIT LOCKOUT - Number of Allowed Re-Starts Exceeded #n
162	UNIT SHUTDOWN - Evaporator Leaving Water Temp Sensor Fault
163	UNIT SHUTDOWN - Evaporator Entering Water Temperature Sensor Fault
166	COMP OR CIRCUIT SHUTDOWN - Mechanical High Pressure Trip #n
172	COM SHUTDOWN - Oil Delta Pressure High Circuit 1, Comp 1”
173	COMP SHUTDOWN - Oil Feed Pressure Sensor Fault #n
176	SHUTDOWN - Phase Voltage Protection
177	COMP SHUTDOWN - Starter Fault Comp #n
183	COMP OR CIRCUIT SHUTDOWN - Suction Temp Sensor Fault #n
187	COMP SHUTDOWN - Mechanical Low Pressure Trip #n
188	Compressor Controller Communication Failed - Circuit #n
188	EXV Controller Communication Failed - Circuit #n
189	COMP SHUTDOWN - No Pressure Change After Start
190	COMP SHUTDOWN - No Pressure at Startup
191	Slide Position Sensor Fault #n
192	UNIT STOP - Emergency Stop Alarm
193	UNIT STOP - Evaporator Water Temps Inverted
194	UNIT STOP - External Alarm
195	Evaporator Leaving Water Temperature 1 Sensor Fault
196	Evaporator Leaving Water Temperature 2 Sensor Fault
197	CIRCUIT SHUTDOWN - Evaporator 1 Freeze Protection
198	CIRCUIT SHUTDOWN - Evaporator 2 Freeze Protection
199	“COMP SHUTDOWN - COMP VFD Fault Circuit #n, Comp #n”
200	“COMP SHUTDOWN - COMP VFD Over Heat Fault Circuit #n, Comp #n”
201	“COMP SHUTDOWN - COM ERROR With COMPRESSOR VFD Circuit #n, Comp #n”
202	“COMP SHURTOWN - Low Discharge Superheat Circuit #n, Comp #n”
228	CIRCUIT SHUTDOWN - PVM GFP Circuit #n Fault
230	COMP SHUTDOWN - Refrige Charge Circuit #n
232	CIRCUIT SHUTDOWN - VFD Control Card High Temperature #n
233	UNIT SHUTDOWN - Condenser LWT or EWT Low (Freeze)
234	CIRCUIT SHUTDOWN - Motor Earth Fault #n
235	CIRCUIT SHUTDOWN - Motor PVM Fault #n
236	CIRCUIT SHUTDOWN - Mains PVM Fault #n
239	Waterside Economizer Valve Fault
240	CIRCUIT SHUTDOWN - Compressor #n Oil Feed Loss

BACnet Intrinsic Alarming

This section provides a comprehensive description of all BACnet objects that are supported by intrinsic alarming. Intrinsic alarms within the Chiller Unit Controller fall into one of three Notification Classes (classified as Warning, Problem, and Faults). Table 19 – Table 21 list the alarm objects by Notification Class along with specific alarm notification properties.

Table 19: BACnet Intrinsic Alarms - Warnings

Notification Class 3 (Warnings)					
Alarm	Object Type/Instance	BACnet Object Name	Event_Enable (Default)		
			To-OffNormal	To-Fault	To-Normal
Alarm/Limit Controller Communication Failed	BV:17	AlarmLimitCtrlrCommFail	X		X
Bad Current Limit Input	BV:918	BadCurrentLimitInput	X		X
Bad Demand Limit Input	BV:513	BadDemandLimitInput	X		X
Bad Setpoint Override Input	BV:512	BadSPointOverrideInput	X		X
Chiller Network Communication Failure[2]	BI:979	ProcessBusFailure	X		X
Circuit 1 Failed Pumpdown	BV:516	C1FailedPumpdown	X		X
Circuit 2 Failed Pumpdown	BV:517	C2FailedPumpdown	X		X
Circuit 3 Failed Pumpdown	BV:518	C3FailedPumpdown	X		X
Circuit 4 Failed Pumpdown	BV:519	C4FailedPumpdown	X		X
DC Fan Fault 1	BI:64	C1DcFanFault	X		X
DC Fan Fault 2	BI:65	C2DcFanFault	X		X
Economizer EXV Comm Failure	BI:47	EconExvCommFail	X		X
Economizer Refrigerant Pressure Sensor Fault 1	AI:234	C1EconRefPress	X		X
Economizer Refrigerant Pressure Sensor Fault 2	AI:235	C2EconRefPress	X		X
Economizer Temperature Sensor Fault 1	AI:238	C1EconRefTemp	X		X
Economizer Temperature Sensor Fault 2	AI:239	C2EconRefTemp	X		X
Evaporator Entering Water Temperature Sensor Warning	AI:1	EntEvapWaterTemp		X	X
External Event	BV:924	UnitExternalEvent	X		X
IGV Position Warning	BI:132	C1Co1IgvPositionWarn	X		X
IGV Position Warning	BI:133	C1Co2IgvPositionWarn	X		X
Low Refrigerant Charge - Circuit 1[2]	BI:976	C1RefrigCharge	X		X
Low Refrigerant Charge - Circuit 2[2]	BI:977	C2RefrigCharge	X		X
Low Refrigerant Charge - Circuit 3[2]	BI:978	C3RefrigCharge	X		X
Option Controller Communication Failed	BV:919	OptionCtrlrCommFail	X		X
Rapid Restore Module Communication Failed[3]	BI:149	RpdRestoreCommFail	X		X
Unit Low Source Temperature Warning[4]	BI:196	LowSourceTempWarn	X		X
Unit Power Restore[1]	BV:515	UnitPowerRestore	X		X
VFD Cooling Fin Overheat Warning	BI:134	C1Co1VfdOvrhtWarn	X		X
VFD Cooling Fin Overheat Warning	BI:135	C1Co2VfdOvrhtWarn	X		X

1. Alarm is only available for AWS chiller application version 2507500204 or earlier.
2. Alarm is only available for ADS chiller.
3. Alarm is only available for AGZ chiller.
4. Alarm is only available WWV chiller.

Table 20: BACnet Intrinsic Alarms - Problems

Notification Class 2 (Problems)					
Alarm	Object Type/ Instance	BACnet Object Name	Event_Enable (Default)		
			To-OffNormal	To-Fault	To-Normal
Power Loss While Running Circuit 1[1]	BV:529	C1RestartDelayPwrLRun	X		X
Power Loss While Running Circuit 2[1]	BV:530	C2RestartDelayPwrLRun	X		X
Power Loss While Running Circuit 3[1]	BV:531	C3RestartDelayPwrLRun	X		X
Power Loss While Running Circuit 4[1]	BV:532	C4RestartDelayPwrLRun	X		X
PUMP 2 START ATTEMPTED - Evaporator Pump 1 Failure[2]	BV:575	EvPumpFault1	X		X
PUMP 1 START ATTEMPTED - Evaporator Pump 2 Failure[2]	BV:576	EvPumpFault2	X		X
START INHIBITED - Ambient Temperature Low	AI:149	OutdoorAirTempLow	X		X
INHIBIT LOAD - Condenser Pressure High 1[1,3]	AI:157	Cond1RefPressureInhLoad	X		X
INHIBIT LOAD - Condenser Pressure High 2[1,3]	AI:158	Cond2RefPressureInhLoad	X		X
INHIBIT LOAD - Condenser Pressure High 3[1,3]	AI:159	Cond3RefPressureInhLoad	X		X
INHIBIT LOAD - Condenser Pressure High 4[1,3]	AI:160	Cond4RefPressureInhLoad	X		X
UNLOAD - Condenser Pressure High 1[1,3]	AI:161	Cond1RefPressureUnload	X		X
UNLOAD - Condenser Pressure High 2[1,3]	AI:162	Cond2RefPressureUnload	X		X
UNLOAD - Condenser Pressure High 3[1,3]	AI:163	Cond3RefPressureUnload	X		X
UNLOAD - Condenser Pressure High 4[1,3]	AI:164	Cond4RefPressureUnload	X		X
INHIBIT LOAD - Evaporator Pressure Low 1[1]	AI:173	C1EvapRefPressureInhLoad	X		X
INHIBIT LOAD - Evaporator Pressure Low 2[1]	AI:174	C2EvapRefPressureInhLoad	X		X
INHIBIT LOAD - Evaporator Pressure Low 3[1]	AI:175	C3EvapRefPressureInhLoad	X		X
INHIBIT LOAD - Evaporator Pressure Low 4[1]	AI:176	C4EvapRefPressureInhLoad	X		X
UNLOAD - Evaporator Pressure Low 1[1]	AI:153	C1EvapRefPressureUnload	X		X
UNLOAD - Evaporator Pressure Low 2[1]	AI:154	C2EvapRefPressureUnload	X		X
UNLOAD - Evaporator Pressure Low 3[1]	AI:155	C3EvapRefPressureUnload	X		X
UNLOAD - Evaporator Pressure Low 4[1]	AI:156	C4EvapRefPressureUnload	X		X
UNLOAD - Compressor Motor Current High Circuit 1 Comp 1[1]	AI:181	C1Co1CurrentUnl	X		X
UNLOAD - Compressor Motor Current High Circuit 2 Comp 1[1]	AI:182	C2Co1CurrentUnl	X		X
UNLOAD - Compressor Motor Current High Circuit 3 Comp 1[1]	AI:183	C3Co1CurrentUnl	X		X
INHIBIT LOAD - Compressor Motor Current High Circuit 1 Comp 1[1]	AI:184	C1Co1CurrentHold	X		X
INHIBIT LOAD - Compressor Motor Current High Circuit 2 Comp 1[1]	AI:185	C2Co1CurrentHold	X		X
INHIBIT LOAD - Compressor Motor Current High Circuit 3 Comp 1[1]	AI:186	C3Co1CurrentHold	X		X
Waterside Economizer EWT Sensor Fault[4]	BI:170	WseEwtSenf	X		X
Waterside Economizer Valve Problem[4]	BI:169	WseValvePrblm	X		X

1. Alarm is only available for AWS chiller application version 2507500204 or earlier.
2. Alarm is only available for AGZ and AWS chillers.
3. Alarm is only available for AWS and ADS chillers.
4. Alarm is only available for chillers with optional Waterside Economizer.

Table 21: BACnet Intrinsic Alarms - Faults

Notification Class 1 (Faults)					
Alarm	Object Type/Instance	BACnet Object Name	Event_Enable (Default)		
			To-OffNormal	To-Fault	To-Normal
Alarm/Limit Controller Communication Failed	BV:17	AlarmLimitCtrlrCommFail	X		X
Circuit 1 Ground Fault Protection[5]	BI:41	C1GroundFault	X		X
Circuit 2 Ground Fault Protection[5]	BI:42	C2GroundFault	X		X
CIRCUIT SHUTDOWN - Evaporator Pressure Sensor Circuit 2 Fault[3]	AI:142	C2EvapRefPressure		X	X
CIRCUIT SHUTDOWN – Evaporator Pressure Sensor Circuit 1 Fault[3]	AI:141	C1EvapRefPressure		X	X
CIRCUIT SHUTDOWN - Low Evaporator Pressure Trip Circuit 1 Fault[3]	AI:141	C1EvapRefPressure	X		X
CIRCUIT SHUTDOWN - Low Evaporator Pressure Trip Circuit 2 Fault	AI:142	C2EvapRefPressure	X		X
CIRCUIT SHUTDOWN - Mains PVM Fault Circuit 1[6]	BV:35	C1OffMainPhaseLoss	X		X
CIRCUIT SHUTDOWN - Mains PVM Fault Circuit 2[6]	BV:36	C2OffMainPhaseLoss	X		X
CIRCUIT SHUTDOWN - Mechanical High Pressure Alarm Circuit 1[9]	BI:18	C1HighPress	X		X
CIRCUIT SHUTDOWN - Motor Earth Fault Circuit 1[6]	BV:27	C1OffMtrEarthLkg	X		X
CIRCUIT SHUTDOWN - Motor Earth Fault Circuit 2[6]	BV:28	C2OffMtrEarthLkg	X		X
CIRCUIT SHUTDOWN - Motor Protector Trip Circuit 1[9]	BI:13	C1MotorProtect	X		X
CIRCUIT SHUTDOWN - Motor PVM Fault Circuit 1[6]	BV:31	C1OffMtrPhaseLoss	X		X
CIRCUIT SHUTDOWN - Motor PVM Fault Circuit 2[6]	BV:32	C2OffMtrPhaseLoss	X		X
CIRCUIT SHUTDOWN - Number of Compressor Re-Starts Exceeded Circuit 1[9]	BI:24	C1NbrRestarts	X		X
CIRCUIT SHUTDOWN - PVM GFP Circuit 1 Fault	BV:968	C1OffPvmGfp	X		X
CIRCUIT SHUTDOWN - PVM GFP Circuit 2 Fault	BV:969	C2OffPvmGfp	X		X
CIRCUIT SHUTDOWN - Suction Temperature Sensor Fault Circuit 1	AI:224	C1SuctionTemperature		X	X
CIRCUIT SHUTDOWN - VFD Control Card High Temperature Circuit 1[6]	BV:23	C1OffCtrlCardTmpHi	X		X
CIRCUIT SHUTDOWN - VFD Control Card High Temperature Circuit 2[6]	BV:24	C2OffCtrlCardTmpHi	X		X
Compressor Controller Communication Failed Circuit 1	BV:9	C1OffCmpCtrlrComFail	X		X
Compressor Controller Communication Failed Circuit 2	BV:10	C2OffCmpCtrlrComFail	X		X
COMP LOCKOUT - Number of Allowed Re-Starts Exceeded Circuit 1 Comp 1	BV:742	C1Comp1OFFNbrRestarts	X		X
COMP LOCKOUT-Number of Allowed Re-Starts Exceeded Circuit 2 Comp 1	BV:744	C2Comp1OFFNbrRestarts	X		X
COMP LOCKOUT - Number of Allowed Re-Starts Exceeded Circuit 3 Comp 1	BV:746	C3Comp1OFFNbrRestarts	X		X
COMP LOCKOUT - Number of Allowed Re-Starts Exceeded Circuit 4 Comp 1	BV:747	C4Comp1OFFNbrRestarts	X		X
COMP SHUTDOWN - Condenser Pressure High Circuit 1 Comp 1	AI:99	Cond1RefPressure	X		X
COMP SHUTDOWN - Condenser Pressure High Circuit 2 Comp 1	AI:100	Cond2RefPressure	X		X
COMP SHUTDOWN - Condenser Pressure High Circuit 3 Comp 1	AI:101	Cond3RefPressure	X		X
COMP SHUTDOWN - Condenser Pressure High Circuit 4 Comp 1	AI:102	Cond4RefPressure	X		X
CIRCUIT SHUTDOWN - Condenser Pressure High Trip Circuit 1 Fault[1]	AI:99	Cond1RefPressure	X		X
CIRCUIT SHUTDOWN – Condenser Pressure High Trip Circuit 2 Fault[1]	AI:100	Cond2RefPressure	X		X
CIRCUIT SHUTDOWN - Condenser Pressure Sensor Circuit 1 Fault[3]	AI:99	Cond1RefPressure		X	X
CIRCUIT SHUTDOWN - Condenser Pressure Sensor Circuit 2 Fault[3]	AI:100	Cond2RefPressure		X	X
CIRCUIT SHUTDOWN - Evaporator 1 Freeze Protection	AI:151	EvapLWT1[1]	X		X

1. Alarm is only available for AWS application version 2507500204 or earlier.
2. Alarm is only available for AGZ and AWS chillers.
3. Alarm is only available for AWS and ADS chillers.
4. Alarm is only available for ADS chiller.
5. Alarm is only available for AWV chiller.
6. Alarm is only available for WWV chiller.
7. Alarm is only available for chillers with optional Waterside Economizer.
8. Alarm is only available for AWV and WWV chillers.
9. Alarm is only available for AMZ chillers.

Notification Class 1 (Faults)					
Alarm	Object Type/Instance	BACnet Object Name	Event_Enable (Default)		
			To-OffNormal	To-Fault	To-Normal
CIRCUIT SHUTDOWN - Evaporator 2 Freeze Protection	AI:152	EvapLWT2[1]	X		X
COMP SHUTDOWN - COM ERROR With COMPRESSOR VFD Circuit 1 Comp 1	BV:948	C1Cmp1OffVfdCommFail	X		X
COMP SHUTDOWN - COM ERROR With COMPRESSOR VFD Circuit 2 Comp 1	BV:950	C2Cmp1OffVfdCommFail	X		X
COMP SHUTDOWN - COM ERROR With COMPRESSOR VFD Circuit 3 Comp 1	BV:952	C3Cmp1OffVfdCommFail	X		X
COMP SHUTDOWN - COMPRESSOR VFD Fault Circuit 1 Comp 1	BV:886	C1Cmp1OffVfdFault	X		X
COMP SHUTDOWN - COMPRESSOR VFD Fault Circuit 2 Comp 1	BV:888	C2Cmp1OffVfdFault	X		X
COMP SHUTDOWN - COMPRESSOR VFD Fault Circuit 3 Comp 1	BV:890	C3Cmp1OffVfdFault	X		X
COMP SHUTDOWN - COMPRESSOR VFD Over Heat Fault Circuit 1 Comp 1	AI:178	C1Co1VfdTemp	X		X
COMP SHUTDOWN - COMPRESSOR VFD Over Heat Fault Circuit 2 Comp 1	AI:179	C2Co1VfdTemp	X		X
COMP SHUTDOWN - COMPRESSOR VFD Over Heat Fault Circuit 3 Comp 1	AI:180	C3Co1VfdTemp	X		X
COMP SHUTDOWN - Condenser Pressure Sensor Fault Circuit 1 Comp 1	AI:99	Cond1RefPressure		X	X
COMP SHUTDOWN - Condenser Pressure Sensor Fault Circuit 2 Comp 1	AI:100	Cond2RefPressure		X	X
COMP SHUTDOWN - Condenser Pressure Sensor Fault Circuit 3 Comp 1	AI:101	Cond3RefPressure		X	X
COMP SHUTDOWN - Condenser Pressure Sensor Fault Circuit 4 Comp 1	AI:102	Cond4RefPressure		X	X
COMP SHUTDOWN - Current Overload Trip Circuit 1 Comp 1	AI:9	C1Comp1Current		X	X
COMP SHUTDOWN - Current Overload Trip Circuit 2 Comp 1	AI:12	C2Comp1Current		X	X
COMP SHUTDOWN - Current Overload Trip Circuit 3 Comp 1	AI:15	C3Comp1Current		X	X
COMP SHUTDOWN - Discharge Temperature Sensor Fault Circuit 1 Comp 1	AI:63	C1Comp1DischargeTemp		X	X
COMP SHUTDOWN - Discharge Temperature Sensor Fault Circuit 2 Comp 1	AI:66	C2Comp1DischargeTemp		X	X
COMP SHUTDOWN - Discharge Temperature Sensor Fault Circuit 3 Comp 1	AI:69	C3Comp1DischargeTemp		X	X
COMP SHUTDOWN - Discharge Temperature Sensor Fault Circuit 4 Comp 1	AI:72	C4Comp1DischargeTemp		X	X
COMP SHUTDOWN - Discharge Temp High Circuit 1 Comp 1	AI:63	C1Comp1DischargeTemp	X		X
COMP SHUTDOWN - Discharge Temp High Circuit 2 Comp 1	AI:66	C2Comp1DischargeTemp	X		X
COMP SHUTDOWN - Discharge Temp High Circuit 3 Comp 1	AI:69	C3Comp1DischargeTemp	X		X
COMP SHUTDOWN - Discharge Temp High Circuit 4 Comp 1	AI:72	C4Comp1DischargeTemp	X		X
COMP SHUTDOWN - Evaporator (or Suction) Pressure Low Circuit 1 Comp 1	AI:141	C1EvapRefPressure	X		X
COMP SHUTDOWN - Evaporator (or Suction) Pressure Low Circuit 2 Comp 1	AI:142	C2EvapRefPressure	X		X
COMP SHUTDOWN - Evaporator (or Suction) Pressure Low Circuit 3 Comp 1	AI:143	C3EvapRefPressure	X		X
COMP SHUTDOWN - Evaporator (or Suction) Pressure Low Circuit 4 Comp 1	AI:144	C4EvapRefPressure	X		X
COMP SHUTDOWN - Evaporator Pressure Sensor Fault Circuit 1 Comp 1	AI:141	C1EvapRefPressure		X	X
COMP SHUTDOWN - Evaporator Pressure Sensor Fault Circuit 2 Comp 1	AI:142	C2EvapRefPressure		X	X

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Notification Class 1 (Faults)					
Alarm	Object Type/Instance	BACnet Object Name	Event_Enable (Default)		
			To-OffNormal	To-Fault	To-Normal
COMP SHUTDOWN - Evaporator Pressure Sensor Fault Circuit 3 Comp 1	AI:143	C3EvapRefPressure		X	X
COMP SHUTDOWN - Evaporator Pressure Sensor Fault Circuit 4 Comp 1	AI:144	C4EvapRefPressure		X	X
COMP SHUTDOWN - Low Discharge Superheat Circuit 1 Comp 1[3]	BV:961	C1Co1LowDischSHAlm	X		X
COMP SHUTDOWN - Low Discharge Superheat Circuit 2 Comp 1[3]	BV:963	C2Co1LowDischSHAlm	X		X
COMP SHUTDOWN - Low Discharge Superheat Circuit 3 Comp 1[3]	BV:965	C3Co1LowDischSHAlm	X		X
COMP SHUTDOWN - Low Pressure Ratio Circuit 1 Comp1	BV:599	C1Comp1OFFLoPressRatio	X		X
COMP SHUTDOWN - Low Pressure Ratio Circuit 2 Comp1	BV:601	C2Comp1OFFLoPressRatio	X		X
COMP SHUTDOWN - Low Pressure Ratio Circuit 3 Comp1	BV:603	C3Comp1OFFLoPressRatio	X		X
COMP SHUTDOWN - Low Pressure Ratio Circuit 4 Comp1	BV:604	C4Comp1OFFLoPressRatio	X		X
COMP SHUTDOWN - Motor Protector Trip Circuit 1 Comp 1	BV:625	C1Cmp1OffMtrProtect	X		X
COMP SHUTDOWN - Motor Protector Trip Circuit 2 Comp 1	BV:627	C2Cmp1OffMtrProtect	X		X
COMP SHUTDOWN - Mechanical Low Pressure Trip Circuit 1 Comp 1	BV:876	C1Comp1OFFMechLoPress	X		X
COMP SHUTDOWN - Mechanical Low Pressure Trip Circuit 2 Comp 1	BV:878	C2Comp1OFFMechLoPress	X		X
COMP SHUTDOWN - Mechanical Low Pressure Trip Circuit 3 Comp 1	BV:880	C3Comp1OFFMechLoPress	X		X
COMP SHUTDOWN - Mechanical Low Pressure Trip Circuit 4 Comp 1	BV:881	C4Comp1OFFMechLoPress	X		X
COMP SHUTDOWN - Motor Temperature High Circuit 1 Comp 1	BV:637	C1Comp1OFFMotorTempHi	X		X
COMP SHUTDOWN - Motor Temperature High Circuit 2 Comp 1	BV:639	C2Comp1OFFMotorTempHi	X		X
COMP SHUTDOWN - Motor Temperature High Circuit 3 Comp 1	BV:641	C3Comp1OFFMotorTempHi	X		X
COMP SHUTDOWN - Motor Temperature High Circuit 4 Comp 1	BV:642	C4Comp1OFFMotorTempHi	X		X
COMP SHUTDOWN - Motor Temp Sensor Fault Circuit 1 Comp 1	BV:899	C1Comp1OFFMotorTSens	X		X
COMP SHUTDOWN - Motor Temp Sensor Fault Circuit 2 Comp 1	BV:901	C2Comp1OFFMotorTSens	X		X
COMP SHUTDOWN - Motor Temp Sensor Fault Circuit 3 Comp 1	BV:903	C3Comp1OFFMotorTSens	X		X
COMP SHUTDOWN - Motor Temp Sensor Fault Circuit 4 Comp 1	BV:904	C4Comp1OFFMotorTSens	X		X
COMP SHUTDOWN - No Pressure Change After Start Circuit 1	BV:905	C1CompNoPressChStart	X		X
COMP SHUTDOWN - No Pressure Change After Start Circuit 2	BV:906	C2CompNoPressChStart	X		X
COMP SHUTDOWN - No Pressure Change After Start Circuit 3	BV:907	C3CompNoPressChStart	X		X
COMP SHUTDOWN - No Pressure Change After Start Circuit 4	BV:908	C4CompNoPressChStart	X		X
COMP SHUTDOWN - No Pressure at Startup Circuit 1	BV:911	C1CompNoPressStart	X		X
COMP SHUTDOWN - No Pressure at Startup Circuit 2	BV:912	C2CompNoPressStart	X		X
COMP SHUTDOWN - No Pressure at Startup Circuit 3	BV:913	C3CompNoPressStart	X		X
COMP SHUTDOWN - No Pressure at Startup Circuit 4	BV:914	C4CompNoPressStart	X		X
COMP SHUTDOWN - Mechanical High Pressure Trip Circuit 1 Comp 1	BV:760	C1Comp1OFFHighPress	X		X
COMP SHUTDOWN - Mechanical High Pressure Trip Circuit 2 Comp 1	BV:762	C2Comp1OFFHighPress	X		X
COMP SHUTDOWN - Mechanical High Pressure Trip Circuit 3 Comp 1	BV:764	C3Comp1OFFHighPress	X		X

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Notification Class 1 (Faults)					
Alarm	Object Type/Instance	BACnet Object Name	Event_Enable (Default)		
			To-OffNormal	To-Fault	To-Normal
COMP SHUTDOWN - Mechanical High Pressure Trip Circuit 4 Comp 1	BV:765	C4Comp1OFFHighPress	X		X
COMP SHUTDOWN - Oil Delta Pressure High Circuit 1 Comp 1	BV:796	C1Comp1OFFOilFilterPHi	X		X
COMP SHUTDOWN - Oil Delta Pressure High Circuit 2 Comp 1	BV:798	C2Comp1OFFOilFilterPHi	X		X
COMP SHUTDOWN - Oil Delta Pressure High Circuit 3 Comp 1	BV:800	C3Comp1OFFOilFilterPHi	X		X
COMP SHUTDOWN - Oil Delta Pressure High Circuit 4 Comp 1	BV:801	C4Comp1OFFOilFilterPHi	X		X
COMP SHUTDOWN - Oil Feed Pressure Sensor Fault Circuit 1 Comp 1	AI:165	C1Comp1OilFeedPress		X	X
COMP SHUTDOWN - Oil Feed Pressure Sensor Fault Circuit 2 Comp 1	AI:166	C2Comp1OilFeedPress		X	X
COMP SHUTDOWN - Oil Feed Pressure Sensor Fault Circuit 3 Comp 1	AI:167	C3Comp1OilFeedPress		X	X
COMP SHUTDOWN - Oil Feed Pressure Sensor Fault Circuit 4 Comp 1	AI:168	C4Comp1OilFeedPress		X	X
COMPRESSOR SHUTDOWN - Overvoltage Circuit 1[6]	BV:655	C1OffOverVoltage	X		X
COMPRESSOR SHUTDOWN - Overvoltage Circuit 2[6]	BV:657	C2OffOverVoltage	X		X
COMP SHUTDOWN - Refrig Charge Circuit 1[4]	BI:973	C1OffRefrigCharge	X		X
COMP SHUTDOWN - Refrig Charge Circuit 2[4]	BI:974	C2OffRefrigCharge	X		X
COMP SHUTDOWN - Refrig Charge Circuit 3[4]	BI:975	C3OffRefrigCharge	X		X
COMP SHUTDOWN - Slide Position Sensor Circuit 1, Comp 1	BV:930	C1Comp1SlidePosSenf	X		X
COMP SHUTDOWN - Slide Position Sensor Circuit 2, Comp 1	BV:932	C2Comp1SlidePosSenf	X		X
COMP SHUTDOWN - Slide Position Sensor Circuit 3, Comp 1	BV:934	C3Comp1SlidePosSenf	X		X
COMP SHUTDOWN - Slide Position Sensor Circuit 4, Comp 1	BV:935	C4Comp1SlidePosSenf	X		X
COMP SHUTDOWN - Starter Fault COMP Circuit 1 Comp 1	BV:821	C1Comp1OFFStarterFault	X		X
COMP SHUTDOWN - Starter Fault COMP Circuit 2 Comp 1	BV:823	C2Comp1OFFStarterFault	X		X
COMP SHUTDOWN - Starter Fault COMP Circuit 3 Comp 1	BV:825	C3Comp1OFFStarterFault	X		X
COMP SHUTDOWN - Starter Fault COMP Circuit 4 Comp 1	BV:826	C4Comp1OFFStarterFault	X		X
COMP SHUTDOWN - Suction Temp Sensor Fault Circuit 1 Comp 1	AI:105	C1Comp1SuctionTemp		X	X
COMP SHUTDOWN - Suction Temp Sensor Fault Circuit 2 Comp 1	AI:108	C2Comp1SuctionTemp		X	X
COMP SHUTDOWN - Suction Temp Sensor Fault Circuit 3 Comp 1	AI:111	C3Comp1SuctionTemp		X	X
COMP SHUTDOWN - Suction Temp Sensor Fault Circuit 4 Comp 1	AI:114	C4Comp1SuctionTemp		X	X
Compressor Oil Feed Loss - Circuit 1, Compressor 1[8]	BI:172	C1Cmp1OilFeedLoss	X		X
Compressor Oil Feed Loss - Circuit 2, Compressor 1[8]	BI:174	C2Cmp1OilFeedLoss	X		X
COMPRESSOR SHUTDOWN - Compressor Does Not Start	BI:78	C1Co1DidNotStart	X		X
COMPRESSOR SHUTDOWN - Compressor Does Not Start	BI:79	C1Co2DidNotStart	X		X
COMPRESSOR SHUTDOWN - Compressor Did Not Stop	BI:90	C1Co1NoCompStopAlm	X		X
COMPRESSOR SHUTDOWN - Compressor Did Not Stop	BI:91	C1Co2NoCompStopAlm	X		X
COMPRESSOR SHUTDOWN - Discharge Pressure High	BI:76	C1Co1DischPressHigh	X		X
COMPRESSOR SHUTDOWN - Discharge Pressure High	BI:77	C1Co2DischPressHigh	X		X
COMPRESSOR SHUTDOWN - Enable Relay Off Fault	BI:98	C1Co1EnRelayOffFlt	X		X
COMPRESSOR SHUTDOWN - Enable Relay Off Fault	BI:99	C1Co2EnRelayOffFlt	X		X
COMPRESSOR SHUTDOWN - IGV Driver Fault	BI:94	C1Co1IGVDriverFlt	X		X
COMPRESSOR SHUTDOWN - IGV Driver Fault	BI:95	C1Co2IGVDriverFlt	X		X

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Notification Class 1 (Faults)					
Alarm	Object Type/Instance	BACnet Object Name	Event_Enable (Default)		
			To-OffNormal	To-Fault	To-Normal
COMPRESSOR SHUTDOWN - IGV Calibration Fault	BI:96	C1Co1IGVCalibFlt	X		X
COMPRESSOR SHUTDOWN - IGV Calibration Fault	BI:97	C1Co2IGVCalibFlt	X		X
COMPRESSOR SHUTDOWN - IPS Over Temperature	BI:130	C1Co1IPSOverTmp	X		X
COMPRESSOR SHUTDOWN - IPS Over Temperature	BI:131	C1Co2IPSOverTmp	X		X
COMP SHUTDOWN - Low Pressure Start Fail Circuit 1	AI:169	C1EvapRefPressureStrtFail	X		X
COMP SHUTDOWN - Low Pressure Start Fail Circuit 2	AI:170	C2EvapRefPressureStrtFail	X		X
COMP SHUTDOWN - Low Pressure Start Fail Circuit 3	AI:171	C3EvapRefPressureStrtFail	X		X
COMP SHUTDOWN - Low Pressure Start Fail Circuit 4	AI:172	C4EvapRefPressureStrtFail	X		X
COMPRESSOR SHUTDOWN - Low Rotor Pump Superheat	BI:84	C1Co1RtrPmpShtLow	X		X
COMPRESSOR SHUTDOWN - Low Rotor Pump Superheat	BI:85	C1Co2RtrPmpShtLow	X		X
COMPRESSOR SHUTDOWN - MBC Fault	BI:92	C1Co1MBCFault	X		X
COMPRESSOR SHUTDOWN - MBC Fault	BI:93	C1Co2MBCFault	X		X
COMPRESSOR SHUTDOWN - MBC Modbus Communication Fault	BI:122	C1Co1MBCMdbsComFlt	X		X
COMPRESSOR SHUTDOWN - MBC Modbus Communication Fault	BI:123	C1Co2MBCMdbsComFlt	X		X
COMPRESSOR SHUTDOWN - MBC Orbit Error	BI:126	C1Co1MBCOrbitError	X		X
COMPRESSOR SHUTDOWN - MBC Orbit Error	BI:127	C1Co2MBCOrbitError	X		X
COMPRESSOR SHUTDOWN - Motor Gap Temperature High	BI:82	C1Co1MtrGapTempHigh	X		X
COMPRESSOR SHUTDOWN - Motor Gap Temperature High	BI:83	C1Co2MtrGapTempHigh	X		X
COMPRESSOR SHUTDOWN - Motor Speed Fail	BI:88	C1Co1MotorSpeedFlt	X		X
COMPRESSOR SHUTDOWN - Motor Speed Fail	BI:89	C1Co2MotorSpeedFlt	X		X
COMPRESSOR SHUTDOWN - Primary Power Fail	BI:128	C1Co1PrimaryPwrFail	X		X
COMPRESSOR SHUTDOWN - Primary Power Fail	BI:129	C1Co2PrimaryPwrFail	X		X
COMPRESSOR SHUTDOWN - Stator Temperature High	BI:80	C1Co1StatorTempHigh	X		X
COMPRESSOR SHUTDOWN - Stator Temperature High	BI:81	C1Co2StatorTempHigh	X		X
COMPRESSOR SHUTDOWN - Suction Pressure Low	BI:74	C1Co1SuctPressLow	X		X
COMPRESSOR SHUTDOWN - Suction Pressure Low	BI:75	C1Co2SuctPressLow	X		X
COMPRESSOR SHUTDOWN - Surge Temperature	BI:86	C1Co1SurgeTempAlm	X		X
COMPRESSOR SHUTDOWN - Surge Temperature	BI:87	C1Co2SurgeTempAlm	X		X
COMPRESSOR SHUTDOWN - Undervoltage Circuit 1[6]	BV:661	C1OffUnderVoltage	X		X
COMPRESSOR SHUTDOWN - Undervoltage Circuit 2[6]	BV:663	C2OffUnderVoltage	X		X
COMPRESSOR SHUTDOWN - VFD Modbus Communication Fault	BI:124	C1Co1VFDMdbsComFlt	X		X
COMPRESSOR SHUTDOWN - VFD Modbus Communication Fault	BI:125	C1Co2VFDMdbsComFlt	X		X
COMP Controller Communication Failed Circuit 1	BV:9	Comp1CntrlrCommFail	X		X
COMP Controller Communication Failed Circuit 2	BV:10	Comp2CntrlrCommFail	X		X
COMP Controller Communication Failed Circuit 3	BV:11	Comp3CntrlrCommFail	X		X
COMP Controller Communication Failed Circuit 4	BV:12	Comp4CntrlrCommFail	X		X
Compressor VFD Current High 1[5]	BI:70	C1Co1HighVfdCurrent	X		X
Compressor VFD Current High 2[5]	BI:71	C2Co1HighVfdCurrent	X		X
DC Fan Controller Comm Failure[5]	BI:46	DcFanCtrlCommFail	X		X
Evaporator EXV Comm Failure[5]	BI:45	EvapExvCommFail	X		X
Evaporator EXV Motor Error 1[5]	BI:56	C1EvapExvMtrFault	X		X
Evaporator EXV Motor Error 2[5]	BI:57	C2EvapExvMtrFault	X		X
Evaporator Leaving Water Temperature 1 Sensor Fault	AI:151	EvapLWT1		X	X
Evaporator Leaving Water Temperature 2 Sensor Fault	AI:152	EvapLWT2		X	X
EXV Controller Communication Failed - Circuit 1	BV:13	C1OffEXVCrtlrComFail	X		X

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Notification Class 1 (Faults)					
Alarm	Object Type/Instance	BACnet Object Name	Event_Enable (Default)		
			To-OffNormal	To-Fault	To-Normal
EXV Controller Communication Failed - Circuit 2	BV:14	C2OffEXVCrtlrComFail	X		X
EXV Controller Communication Failed Circuit 1	BV:13	EXVCntrlr1CommFail	X		X
EXV Controller Communication Failed Circuit 2	BV:14	EXVCntrlr2CommFail	X		X
EXV Controller Communication Failed Circuit 3	BV:15	EXVCntrlr3CommFail	X		X
EXV Controller Communication Failed Circuit 4	BV:16	EXVCntrlr4CommFail	X		X
Fan Controller Communication Failed Circuit 1 & 2	BV:18	FanCrtlr1and2ComFail	X		X
Fan Controller Communication Failed Circuit 3	BV:19	FanCrtlr3ComFail	X		X
Fan Controller Communication Failed Circuit 4	BV:20	FanCrtlr4ComFail	X		X
Fan Controller Communication Failed Circuit 3 & 4	BV:21	FanCrtlr3and4ComFail	X		X
Low Pressure Difference or Ratio 1[5]	BI:48	C1Cmp1LowPrDiffOrRatio	X		X
Low Pressure Difference or Ratio 2[5]	BI:49	C2Cmp1LowPrDiffOrRatio	X		X
Multistart Fail Compressor 1[5]	BI:52	C1Cmp1MultiStartFail	X		X
Multistart Fail Compressor 2[5]	BI:53	C2Cmp1MultiStartFail	X		X
SHUTDOWN - Phase Voltage Protection - Unit	BV:820	UnitOFFPhaseVoltage	X		X
SHUTDOWN - Phase Voltage Protection Circuit 1	BV:926	C1OFFPhaseVoltage	X		X
SHUTDOWN - Phase Voltage Protection Circuit 2	BV:927	C2OFFPhaseVoltage	X		X
SHUTDOWN - Phase Voltage Protection Circuit 3	BV:928	C3OFFPhaseVoltage	X		X
SHUTDOWN - Phase Voltage Protection Circuit 4	BV:929	C4OFFPhaseVoltage	X		X
Unit Ground Fault Protection[5]	BI:40	UnitGroundFault	X		X
Evaporator Entering Water Temperature Sensor Fault	AI:1	EntEvapWaterTemp		X	X
UNIT SHUTDOWN - Evaporator Leaving Water Temperature Sensor Fault	AI:2	LvgEvapWaterTempUnit		X	X
UNIT SHUTDOWN - Condenser LWT or EWT Low (Freeze)[6]	BV:22	UnitOffCndLvgWTempSen/ UnitOffCndEntWTempSen	X		X
UNIT SHUTDOWN - Evaporator LWT or EWT Low (Freeze)	BV:702	UnitOffEvpLvgWTempSen/ UnitOffEvpEntWTempSen	X		X
UNIT SHUTDOWN - Evaporator Water Flow Loss	BV:701	UnitOFFEvapWaterFlow	X		X
Outside Air Temperature Sensor Fault	AI:5	OutdoorAirTemp		X	X
UNIT STOP - Emergency Stop Alarm	BV:921	EmergencyStopAlarm	X		X
UNIT STOP - Evaporator Water Temperatures Inverted	BV:922	EvapWTempInverted	X		X
UNIT STOP - External Alarm	BV:923	ExternalAlarm	X		X
UNIT STOP - PVM GFP Fault	BV:967	UnitOffPvmGfp	X		X
Waterside Economizer[7]	BI:171	WseValveFault	X		X

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Recipient List Property

The recipient list property (Recipient_List) of the Notification Class object is a list of standard BACnet data type BACnetDestination elements. This data type consists of the elements as shown in Table 22 and the complete list of alarms is shown in Table 12.

If the BACnet workstation or BACnet device supports Intrinsic Alarming but is unable to subscribe to the recipient list property of the notification class object, the workstation or device can still receive alarm notification by adding its Device Instance to the “NC Dev 1=”, “NC Dev 2=” or “NC Dev 3=” items on the unit controller keypad/display. These items are located on the IP Setup or MS/TP Setup menus. Cycle power to the unit controller for changes to take effect. Once power is cycled, the unit controller sends out a “Who-Is” command directed at the device. If the device responds, the unit controller sends Unconfirmed Notifications for all alarms that are generated in the application. If the device does not respond to the Who-Is, the unit controller periodically sends out the Who-Is until the device responds.

Table 22: Recipient List Property for Standard Notification Class Objects

Element	Standard BACnet Data Type	Description
Valid Days	BACnetDaysOfWeek	The set of days of the week that the destination may be used between the From Time and the To Time
From Time, To Time	Time	The window of time (inclusive) when the destination is visible on the days of the week in Valid Days
Recipient	BACnet Recipient	The destination devices to receive the notification. A maximum of 20 destination devices is supported.
Process Identifier	Unsigned32	The handle of a process within the recipient device that is to receive the event notification
Issue Confirmed Notification	Boolean	(TRUE) if confirmed notifications are to be sent and (FALSE) if unconfirmed notifications are to be sent
Transitions	BACnetEventTransition	Bits A set of three flags that indicate the transition (TO-OFFNORMAL, TO-FAULT, and TO-NORMAL) for which this recipient is suitable.

LonWorks Alarms

LONWORKS Alarm Monitoring

The unit controller may have alarms monitored by one of three methods: alarm class, reading In_alarm, or reading the alarm descriptor.

Monitor by Alarm Class (Code or Index)

To monitor alarms by alarm class, read nvoWarningAlarm, nvoProblemAlarm and nvoFaultAlarm. The value corresponds to the highest alarm code that is active. It is possible to have multiple active alarms, but only the alarm with the highest alarm code is displayed.

See Table 23 – Table 25 for a complete list of LONWORKS alarms organized by code (Warnings, Problems, and Faults, respectively) along with code values and descriptions. The alarm code and index is explained in Figure 1.

Monitor by In_Alarm

To monitor whether or not any alarm is active in the unit controller, read nvoChillerstat. In_alarm. This value displays 1 if there is any active alarm. If the value read from nvoChillerstat. In_alarm is zero, there are no active alarms.

Monitor by Alarm Descriptor

To monitor alarms using the alarm descriptor, read nvoAlarmDescr. This point can be use to view up to 15 simultaneous active alarms. If more than one alarm is active, the alarms are scroll through every 10 seconds.

LONWORKS Alarm Clearing

Use nviClearAlarm to clear alarms by setting the state property of nviClearAlarm to 1. The value property of nviClearAlarm is not used.

Clear Alarm - Network

Keypad Menu Path No Keypad Equivalent This read/write input network variable clears all active alarms. Many alarms are automatically clearing alarms. Of the alarms that need to be manually cleared, the alarms listed below cannot be cleared from the network. Refer to Table 4, Clear Alarm - Network.

- COMPRESSOR SHUTDOWN - Evaporator Pressure Low Circuit #n Compressor #n Fault
- COMPRESSOR SHUTDOWN - Condenser Pressure High Circuit #n Compressor #n Fault
- COMPRESSOR SHUTDOWN - Motor Temperature High Circuit #n Compressor #n Fault
- UNIT SHUTDOWN – Evaporator Leaving Water Temp Low (Freeze)
- COMPRESSOR SHUTDOWN - Mechanical High Pressure Trip Circuit #n Compressor #n Fault
- COMPRESSOR SHUTDOWN - Mechanical Low Pressure Trip Circuit #n Compressor #n Fault

TABLE 23: LONWORKS ALARMS - WARNINGS

Warnings Alarm Code			
LonWorks Variable Name	**SNVT Index**	**SNVT Type**	**Description**
nvoWarningAlarm	51	SNVT_count_f	Allows individual notification of the active warning alarm. The alarms are not ordered based on any priority. *If multiple warning alarms are present at one time, this object will be set to the alarm that has the highest alarm code.* This object is set to zero if no warning alarms are active.

Alarm Code	Description	Alarm Code	Description
0	No Alarms	4192	Low Refrigerant Charge – Circuit 3
513	Evaporator Entering Water Temp Sensor Warning	4352	Chiller Network Communication Failure
2049	Bad Setpoint Override Input	6177	Economizer Refrigerant Pressure Sensor Fault Circuit 1
2305	Bad Demand Limit Input	6209	Economizer Refrigerant Pressure Sensor Fault Circuit 2
2817	Unit Power Restore	6433	Economizer Temperature Sensor Fault Circuit 1
3105	Circuit 1 Failed Pumpdown	6465	Economizer Temperature Sensor Fault Circuit 2
3137	Circuit 2 Failed Pumpdown	6945	DC Fan Fault Circuit 1
3169	Circuit 3 Failed Pumpdown	6977	DC Fan Fault Circuit 2
3201	Circuit 4 Failed Pumpdown	7169	Economizer EXV Comm Failure
3329	External Event	53285	Compressor 1 IGV Position Warning
3841	Option Controller Communication Failed	53289	Compressor 2 IGV Position Warning
3585	Bad Current Limit Input	53541	Compressor 1 VFD Overheat Warning
4128	Low Refrigerant Charge – Circuit 1	53545	Compressor 2 VFD Overheat Warning
4160	Low Refrigerant Charge – Circuit 2	54273	Rapid Restore Module Communication Failure
		62721	Unit Low Source Temperature Warning

TABLE 24: LONWORKS ALARMS - PROBLEMS

Problems Alarm Code			
LonWorks Variable Name	**SNVT Index**	**SNVT Type**	**Description**
nvoProblemAlarm	51	SNVT_count_f	Allows individual notification of the active problem alarm. The alarms are not ordered based on any priority. If multiple problem alarms are present at one time, this object will be set to the alarm that has the highest alarm code. This object is set to zero if no problem alarms are active.

Alarm Code	Description	Alarm Code	Description
0	No Alarms	19490	INHIBIT LOAD - Evaporator Pressure Low Circuit 1
16418	RESTART DELAYED - Power Loss While Running Circuit 1	19522	INHIBIT LOAD - Evaporator Pressure Low Circuit 2
16450	RESTART DELAYED - Power Loss While Running Circuit 2	19554	INHIBIT LOAD - Evaporator Pressure Low Circuit 3
16482	RESTART DELAYED - Power Loss While Running Circuit 3	19586	INHIBIT LOAD - Evaporator Pressure Low Circuit 4
16514	RESTART DELAYED - Power Loss While Running Circuit 4	20002	UNLOAD - Evaporator Pressure Low Circuit 1
16642	START INHIBITED - Ambient Temperature Low	20034	UNLOAD - Evaporator Pressure Low Circuit 2
16898	INHIBIT LOAD - Condenser Pressure High	20066	UNLOAD - Evaporator Pressure Low Circuit 3
17186	INHIBIT LOAD - Condenser Pressure High Circuit 1	20098	UNLOAD - Evaporator Pressure Low Circuit 4
17218	INHIBIT LOAD - Condenser Pressure High Circuit 2	20262	UNLOAD - Comp Motor Current High Circuit 1, Comp 1
17250	INHIBIT LOAD - Condenser Pressure High Circuit 3	20294	UNLOAD - Comp Motor Current High Circuit 2, Comp 1
17282	INHIBIT LOAD - Condenser Pressure High Circuit 4	20326	UNLOAD - Comp Motor Current High Circuit 3, Comp 1
17698	UNLOAD - Condenser Pressure High Circuit 1	20514	EVAPORATOR PUMP ON - Evaporator Water Freeze Protection
17730	UNLOAD - Condenser Pressure High Circuit 2	20738	PUMP 2 START ATTEMPTED - Evaporator Pump 1 Failure
17762	UNLOAD - Condenser Pressure High Circuit 3	20994	PUMP 1 START ATTEMPTED - Evaporator Pump 2 Failure
17794	UNLOAD - Condenser Pressure High Circuit 4	21542	INHIBIT LOAD - Comp Motor Current High Circuit 1, Comp 1
17954	CONDENSER PUMP ON - Condenser Water Freeze Protection	21574	INHIBIT LOAD - Comp Motor Current High Circuit 2, Comp 1
18178	PUMP #2 START ATTEMPTED - Condenser Pump #1 Failure	21606	INHIBIT LOAD - Comp Motor Current High Circuit 3, Comp 1
18434	PUMP #1 START ATTEMPTED - Condenser Pump #2 Failure	60674	Water Side Economizer Valve Problem
		60930	Water Side Economizer EWT Sensor Failure

TABLE 25: LONWORKS ALARMS - FAULTS

Fault Alarm Code			
LonWorks Variable Name	**SNVT Index**	**SNVT Type**	**Description**
nvoFaultAlarm	51	SNVT_count_f	Allows individual notification of the active fault alarm. The alarms are not ordered based on any priority. *If multiple fault alarms are present at one time, this object will be set to the alarm that has the highest alarm code.* This object is set to zero if no fault alarms are active.

Alarm Code	Description
0	No Alarms
1027	Condenser Leaving Water Temperature Sensor Failure
5159	Compressor 1 IGV Position Failure
5163	Compressor 2 IGV Position Failure
24615	COMPRESSOR SHUTDOWN - Comp 1 Stator Temperature1 Sensor Fault
24619	COMPRESSOR SHUTDOWN - Comp 2 Stator Temperature1 Sensor Fault
24871	COMPRESSOR SHUTDOWN - Comp 1 Stator Temperature2 Sensor Fault
24875	COMPRESSOR SHUTDOWN - Comp 2 Stator Temperature2 Sensor Fault
25127	COMPRESSOR SHUTDOWN - Comp 1 Stator Temperature3 Sensor Fault
25131	COMPRESSOR SHUTDOWN - Comp 2 Stator Temperature3 Sensor Fault
25383	COMPRESSOR SHUTDOWN - Comp 1 Motor Gap Temperature Sensor Fault
25387	COMPRESSOR SHUTDOWN - Comp 2 Motor Gap Temperature Sensor Fault
25639	COMPRESSOR SHUTDOWN - Comp 1 Motor Case Temperature Sensor Fault
25643	COMPRESSOR SHUTDOWN - Comp 2 Motor Case Temperature Sensor Fault
25895	COMPRESSOR SHUTDOWN - Comp 1 Rotor Pump Temperature Sensor Fault
25899	COMPRESSOR SHUTDOWN - Comp 2 Rotor Pump Temperature Sensor Fault
26151	COMPRESSOR SHUTDOWN - Comp 1 Discharge Pressure Sensor Fault
26155	COMPRESSOR SHUTDOWN - Comp 2 Discharge Pressure Sensor Fault
26407	COMPRESSOR SHUTDOWN - Comp 1 Suction Pressure Low
26411	COMPRESSOR SHUTDOWN - Comp 2 Suction Pressure Low
26663	COMPRESSOR SHUTDOWN - Comp 1 Discharge Pressure High
26667	COMPRESSOR SHUTDOWN - Comp 2 Discharge Pressure High
26919	COMPRESSOR SHUTDOWN - Comp 1 Compressor Does Not Start
26923	COMPRESSOR SHUTDOWN - Comp 2 Compressor Does Not Start
27175	COMPRESSOR SHUTDOWN - Comp 1 Stator Temperature High
27179	COMPRESSOR SHUTDOWN - Comp 2 Stator Temperature High
27431	COMPRESSOR SHUTDOWN - Comp 1 Motor Gap Temperature High
27435	COMPRESSOR SHUTDOWN - Comp 2 Motor Gap Temperature High
27687	COMPRESSOR SHUTDOWN - Comp 1 Low Rotor Pump Superheat
27691	COMPRESSOR SHUTDOWN - Comp 2 Low Rotor Pump Superheat
27943	COMPRESSOR SHUTDOWN - Comp 1 Surge Temperature
27947	COMPRESSOR SHUTDOWN - Comp 2 Surge Temperature
28199	COMPRESSOR SHUTDOWN - Comp 1 Motor Speed Fail
28203	COMPRESSOR SHUTDOWN - Comp 2 Motor Speed Fail
28455	COMPRESSOR SHUTDOWN - Comp 1 Compressor Did Not Stop
28459	COMPRESSOR SHUTDOWN - Comp 2 Compressor Did Not Stop
28711	COMPRESSOR SHUTDOWN - Comp 1 MBC Fault
28715	COMPRESSOR SHUTDOWN - Comp 2 MBC Fault
28967	COMPRESSOR SHUTDOWN - Comp 1 IGV Driver Fault
28971	COMPRESSOR SHUTDOWN - Comp 2 IGV Driver Fault
29223	COMPRESSOR SHUTDOWN - Comp 1 IGV Calibration Fault
29227	COMPRESSOR SHUTDOWN - Comp 2 IGV Calibration Fault
29479	COMPRESSOR SHUTDOWN - Comp 1 Enable Relay Off Fault
29483	COMPRESSOR SHUTDOWN - Comp 2 Enable Relay Off Fault
29735	COMPRESSOR SHUTDOWN - Comp 1 MBC Modbus Communication Fault
29739	COMPRESSOR SHUTDOWN - Comp 2 MBC Modbus Communication Fault
29991	COMPRESSOR SHUTDOWN - Comp 1 VFD Modbus Communication Fault
29995	COMPRESSOR SHUTDOWN - Comp 2 VFD Modbus Communication Fault
30247	COMPRESSOR SHUTDOWN - Comp 1 MBC Orbit Error
30251	COMPRESSOR SHUTDOWN - Comp 2 MBC Orbit Error
30503	COMPRESSOR SHUTDOWN - Comp 1 Primary Power Fail
30507	COMPRESSOR SHUTDOWN - Comp 2 Primary Power Fail
30759	COMPRESSOR SHUTDOWN - Comp 1 IPS Over Temperature
30763	COMPRESSOR SHUTDOWN - Comp 2 IPS Over Temperature
31015	COMPRESSOR SHUTDOWN - Comp 1 Suction Pressure Sensor Fault
31019	COMPRESSOR SHUTDOWN - Comp 2 Suction Pressure Sensor Fault
32551	COMP SHUTDOWN - Low Pressure Ratio Circuit 1, Comp 1
32583	COMP SHUTDOWN - Low Pressure Ratio Circuit 2, Comp 1
32615	COMP SHUTDOWN - Low Pressure Ratio Circuit 3, Comp 1
32647	COMP SHUTDOWN - Low Pressure Ratio Circuit 4, Comp 1
32771	COMP SHUTDOWN - Outside Air Temp Sensor Fault,
33063	COMP SHUTDOWN - Current Overload Trip Circuit 1, Comp 1
33095	COMP SHUTDOWN - Current Overload Trip Circuit 2, Comp 1
33127	COMP SHUTDOWN - Current Overload Trip Circuit 3, Comp 1
33575	COMPRESSOR SHUTDOWN - Comp 1 Low Motor Current
33579	COMPRESSOR SHUTDOWN - Comp 2 Low Motor Current
34083	CIRCUIT SHUTDOWN - Motor Protector Trip Circuit 1
34087	COMP SHUTDOWN - Motor Protector Trip Circuit 1 Comp 1
34119	COMP SHUTDOWN - Motor Protector Trip Circuit 2 Comp 1
34599	COMP SHUTDOWN - Motor Temp High Circuit 1, Comp 1
34631	COMP SHUTDOWN - Motor Temp High Circuit 2, Comp 1
34663	COMP SHUTDOWN - Motor Temp High Circuit 3, Comp 1
34695	COMP SHUTDOWN - Motor Temp High Circuit 4, Comp 1
34855	COMP SHUTDOWN - Motor Temp Sensor Fault Circuit 1, Comp 1
34887	COMP SHUTDOWN - Motor Temp Sensor Fault Circuit 2, Comp 1
34919	COMP SHUTDOWN - Motor Temp Sensor Fault Circuit 3, Comp 1
34951	COMP SHUTDOWN - Motor Temp Sensor Fault Circuit 4, Comp 1
35623	COMPRESSOR SHUTDOWN - Overvoltage #1

Alarm Code	Description
35655	COMPRESSOR SHUTDOWN - Overvoltage #2
35879	COMPRESSOR SHUTDOWN - Undervoltage #1
35911	COMPRESSOR SHUTDOWN - Undervoltage #2
36387	CIRCUIT SHUTDOWN - Condenser Pressure Sensor Circuit 1 Fault
36391	COMP SHUTDOWN - Condenser Pressure Sensor Fault Circuit 1, Comp 1
36419	CIRCUIT SHUTDOWN - Condenser Pressure Sensor Circuit 2 Fault
36423	COMP SHUTDOWN - Condenser Pressure Sensor Fault Circuit 2, Comp 1
36455	COMP SHUTDOWN - Condenser Pressure Sensor Fault Circuit 3, Comp 1
36487	COMP SHUTDOWN - Condenser Pressure Sensor Fault Circuit 4, Comp 1
36611	COMPRESSOR SHUTDOWN - Condenser Water Flow Loss
37155	CIRCUIT SHUTDOWN - Condenser Pressure High Trip Circuit 1 Fault
37159	COMP SHUTDOWN - Condenser Pressure High Circuit 1, Comp 1
37187	CIRCUIT SHUTDOWN - Condenser Pressure High Trip Circuit 2 Fault
37191	COMP SHUTDOWN - Condenser Pressure High Circuit 2, Comp 1
37223	COMP SHUTDOWN - Condenser Pressure High Circuit 3, Comp 1
37255	COMP SHUTDOWN - Condenser Pressure High Circuit 4, Comp 1
37671	COMP SHUTDOWN - Discharge Temp Sensor Fault Circuit 1, Comp 1
37675	COMPRESSOR SHUTDOWN - Comp 2 Discharge Temperature Sensor Fault
37703	COMP SHUTDOWN - Discharge Temp Sensor Fault Circuit 2, Comp 1
37735	COMP SHUTDOWN - Discharge Temp Sensor Fault Circuit 3, Comp 1
37767	COMP SHUTDOWN - Discharge Temp Sensor Fault Circuit 4, Comp 1
37927	COMP SHUTDOWN - Discharge Temp High Circuit 1, Comp 1
37959	COMP SHUTDOWN - Discharge Temp High Circuit 2, Comp 1
37991	COMP SHUTDOWN - Discharge Temp High Circuit 3, Comp 1
38023	COMP SHUTDOWN - Discharge Temp High Circuit 4, Comp 1
38147	UNIT SHUTDOWN - Condenser Entering Water Temperature Sensor Fault
38403	UNIT SHUTDOWN - Evaporator Water Flow Loss,
38659	UNIT SHUTDOWN - Evaporator Leaving Water Temp Low (Freeze)
38659	UNIT SHUTDOWN - Evaporator LWT or EWT Low (Freeze)
38915	COMP SHUTDOWN - Evaporator Pressure Low
39203	CIRCUIT SHUTDOWN - Low Evaporator Pressure Trip Circuit 1 Fault
39207	COMP SHUTDOWN - Evaporator Pressure Low Circuit 1, Comp 1
39235	CIRCUIT SHUTDOWN - Low Evaporator Pressure Trip Circuit 2 Fault
39239	COMP SHUTDOWN - Evaporator Pressure Low Circuit 2, Comp 1
39271	COMP SHUTDOWN - Evaporator Pressure Low Circuit 3, Comp 1
39303	COMP SHUTDOWN - Evaporator Pressure Low Circuit 4, Comp 1
39715	CIRCUIT SHUTDOWN - Evaporator Pressure Sensor Circuit 1 Fault
39719	COMP SHUTDOWN - Evaporator Pressure Sensor Fault Circuit 1, Comp 1
39747	CIRCUIT SHUTDOWN - Evaporator Pressure Sensor Circuit 2 Fault
39751	COMP SHUTDOWN - Evaporator Pressure Sensor Fault Circuit 2, Comp 1
39783	COMP SHUTDOWN - Evaporator Pressure Sensor Fault Circuit 3, Comp 1

Alarm Code	Description
39815	COMP SHUTDOWN - Evaporator Pressure Sensor Fault Circuit 4, Comp 1
40231	COMPRESSOR SHUTDOWN - Comp 1 Lift Pressure Low
40235	COMPRESSOR SHUTDOWN - Comp 2 Lift Pressure Low
40739	COMPRESSOR SHUTDOWN - Liquid Line Temperature Sensor Fault
41251	CIRCUIT SHUTDOWN - Number of Compressor Re-Starts Exceeded Circuit 1
41255	COMP LOCKOUT - Number of Allowed Re-Starts Exceeded Circuit 1, Comp 1
41287	COMP LOCKOUT - Number of Allowed Re-Starts Exceeded Circuit 2, Comp 1
41319	COMP LOCKOUT - Number of Allowed Re-Starts Exceeded Circuit 3, Comp 1
41351	COMP LOCKOUT - Number of Allowed Re-Starts Exceeded Circuit 4, Comp 1
41475	UNIT SHUTDOWN - Evaporator Leaving Water Temp Sensor Fault
41731	UNIT SHUTDOWN - Evaporator Entering Water Temp Sensor Failure
42531	CIRCUIT SHUTDOWN - Mechanical High Pressure Alarm Circuit 1
42535	COMP SHUTDOWN - Mechanical High Pressure Trip Circuit 1, Comp 1
42567	COMP SHUTDOWN - Mechanical High Pressure Trip Circuit 2, Comp 1
42599	COMP SHUTDOWN - Mechanical High Pressure Trip Circuit 3, Comp 1
42631	COMP SHUTDOWN - Mechanical High Pressure Trip Circuit 4, Comp 1
44327	COMP SHUTDOWN - Oil Feed Pressure Sensor Fault Circuit 1, Comp 1
44359	COMP SHUTDOWN - Oil Feed Pressure Sensor Fault Circuit 2, Comp 1
44391	COMP SHUTDOWN - Oil Feed Pressure Sensor Fault Circuit 3, Comp 1
44423	COMP SHUTDOWN - Oil Feed Pressure Sensor Fault Circuit 4, Comp 1
45059	SHUTDOWN - Phase Voltage Protection
45351	COMP SHUTDOWN - Starter Fault Comp Circuit 1, Comp 1
45383	COMP SHUTDOWN - Starter Fault Comp Circuit 2, Comp 1
45415	COMP SHUTDOWN - Starter Fault Comp Circuit 3, Comp 1
45447	COMP SHUTDOWN - Starter Fault Comp Circuit 4, Comp 1
46887	COMP SHUTDOWN - Suction Temp Sensor Fault Circuit 1, Comp 1
46919	COMP SHUTDOWN - Suction Temp Sensor Fault Circuit 2, Comp 1
46951	COMP SHUTDOWN - Suction Temp Sensor Fault Circuit 3, Comp 1
46983	COMP SHUTDOWN - Suction Temp Sensor Fault Circuit 4, Comp 1
47911	COMP SHUTDOWN - Mechanical Low Pressure Trip Circuit 1, Comp 1
47943	COMP SHUTDOWN - Mechanical Low Pressure Trip Circuit 2, Comp 1
47975	COMP SHUTDOWN - Mechanical Low Pressure Trip Circuit 3, Comp 1
48007	COMP SHUTDOWN - Mechanical Low Pressure Trip Circuit 4, Comp 1
48131	Unit Controller Offline
48163	Compressor Controller Communication Failed - Circuit #1
48163	EXV Controller Communication Failed - Circuit #1
48163	Controller Board Offline Circuit 1
48195	Controller Board Offline Circuit 2
48195	Compressor Controller Communication Failed - Circuit #2
48195	EXV Controller Communication Failed - Circuit #2
48227	Controller Board Offline Circuit 3
48259	Controller Board Offline Circuit 4
48419	COMP SHUTDOWN - No Pressure Change After Start Circuit 1

Alarm Code	Description
48451	COMP SHUTDOWN - No Pressure Change After Start Circuit 2
48483	COMP SHUTDOWN - No Pressure Change After Start Circuit 3
48515	COMP SHUTDOWN - No Pressure Change After Start Circuit 4
48675	COMP SHUTDOWN - No Pressure at Startup Circuit 1
48707	COMP SHUTDOWN - No Pressure at Startup Circuit 2
48739	COMP SHUTDOWN - No Pressure at Startup Circuit 3
48771	COMP SHUTDOWN - No Pressure at Startup Circuit 4
48935	COMP SHUTDOWN - Slide Position Sensor Fault Circuit 1, Comp1
48967	COMP SHUTDOWN - Slide Position Sensor Fault Circuit 2, Comp1
48999	COMP SHUTDOWN - Slide Position Sensor Fault Circuit 3, Comp1
49031	COMP SHUTDOWN - Slide Position Sensor Fault Circuit 4, Comp1
49155	UNIT STOP - Emergency Stop Alarm
49411	UNIT STOP - Evaporator Water Temps Inverted
49667	UNIT STOP - External Alarm
49923	Evaporator Leaving Water Temp 1 Sensor Fault
50179	Evaporator Leaving Water Temp 2 Sensor Fault
50435	CIRCUIT SHUTDOWN - Evaporator 1 Freeze Protection
50691	CIRCUIT SHUTDOWN - Evaporator 2 Freeze Protection
50983	COMP SHUTDOWN - COMP VFD Fault Circuit 1, Comp 1
51015	COMP SHUTDOWN - COMP VFD Fault Circuit 2, Comp 1
51047	COMP SHUTDOWN - COMP VFD Fault Circuit 3, Comp 1
51239	COMP SHUTDOWN - COMP VFD Over Heat Fault Circuit 1, Comp 1
51271	COMP SHUTDOWN - COMP VFD Over Heat Fault Circuit 2, Comp 1
51303	COMP SHUTDOWN - COMP VFD Over Heat Fault Circuit 3, Comp 1
51495	COMP SHUTDOWN - COM ERROR With COMP VFD Circuit 1, Comp 1
51527	COMP SHUTDOWN - COM ERROR With COMP VFD Circuit 2, Comp 1
51559	COMP SHUTDOWN - COM ERROR With COMP VFD Circuit 3, Comp 1
51751	COMP SHUTDOWN - Low Discharge Superheat Circuit 1, Comp 1

Alarm Code	Description
51783	COMP SHUTDOWN - Low Discharge Superheat Circuit 2, Comp 1
51815	COMP SHUTDOWN - Low Discharge Superheat Circuit 3, Comp 1
58371	UNIT STOP - PVM GFP Fault
58403	CIRCUIT SHUTDOWN - PVM GFP Circuit 1 Fault
58435	CIRCUIT SHUTDOWN - PVM GFP Circuit 2 Fault
58915	COMP SHUTDOWN - Refrige Charge Circuit 1
58947	COMP SHUTDOWN - Refrige Charge Circuit 2
58979	COMP SHUTDOWN - Refrige Charge Circuit 3
59427	CIRCUIT SHUTDOWN - VFD Control Card High Temperature #1
59459	CIRCUIT SHUTDOWN - VFD Control Card High Temperature #2
59651	UNIT SHUTDOWN - Condenser LWT or EWT Low (Freeze)
59939	CIRCUIT SHUTDOWN - Motor Earth Fault #1
59971	CIRCUIT SHUTDOWN - Motor Earth Fault #2
60195	CIRCUIT SHUTDOWN - Motor PVM Fault #1
60227	CIRCUIT SHUTDOWN - Motor PVM Fault #2
60451	CIRCUIT SHUTDOWN - Mains PVM Fault #1
60483	CIRCUIT SHUTDOWN - Mains PVM Fault #2
61477	CIRCUIT SHUTDOWN - Oil Feed Loss Circuit 1, Compressor 1
61509	CIRCUIT SHUTDOWN - Oil Feed Loss Circuit 2, Compressor 1
7427	Unit Ground Fault Protection
7683	Circuit 1 Ground Fault Protection
7939	Circuit 2 Ground Fault Protection
8195	Evaporator EXV Comm Failure
8451	DC Fan Controller Comm Failure
8743	Low Pressure Difference or Ratio Circuit 1
8775	Low Pressure Difference or Ratio Circuit 2
8999	Multistart Fail Compressor Circuit 1
9031	Multistart Fail Compressor Circuit 2
9255	Evaporator EXV Motor Error Circuit 1
9287	Evaporator EXV Motor Error Circuit 2
9511	Compressor VFD Current High Circuit 1
9543	Compressor VFD Current High Circuit 2
61187	Water Side Economizer Valve Fault

Device Management

LONWORKS Device Management

The following functions are specific to the LONWORKS device (i.e. LONWORKS communication module). These functions are used for maintenance and testing. A network management tool such as Echelon's LonMaker® is typically used to issue the network commands.

Offline

When the LONWORKS communication module receives a network command to go Offline, the unit controller continues to operate but LONWORKS communication is suspended except for network management messages.

Online

When the LONWORKS communication module receives a network command to go Online, LONWORKS network messaging is restored.

Reset

When the LONWORKS communication module receives a network command Reset command, it performs the following:

1. Send a command to the unit controller to perform a warm reset, maintaining non-volatile memory.
2. Reset the Neuron processor.

Wink

The wink function is not supported.

BACnet Device Management

The following functions are specific to the BACnet device (i.e. BACnet communication module). These functions are used for maintenance and testing. A network management tool such as VTS is typically used to issue the network commands.

DeviceCommunicationControl - Disable

The purpose of this command is to reduce network traffic for diagnostic testing of the BACnet network. When the BACnet communication module receives a network command to Disable communications, it stops passing information to the network. It is possible to specify an optional length of time that communication is suspended. The unit continues to operate during the Disabled state.

DeviceCommunicationControl - Enable

When the BACnet communication module receives a network command to Enable communications, chiller communication to the BACnet network is restored.

ReinitializeDevice (Reset)

When the BACnet communication module BACnet Communication Module is capable of receiving a network ReinitializeDevice command to reboot itself (cold start or warm start). The functionality of a cold and warm start are the same and simply reboot the BACnet communication module. No password is required.

Appendix A: Protocol Implementation Conformance Statement (PICS)

BACnet Protocol Implementation Conformance Statement

This section contains the Protocol Implementation Conformance Statement (PICS) for the Chiller Unit Controller as required by ANSI/ASHRAE (American National Standards Institute/American Society of Heating, Refrigeration, and Air Conditioning Engineers) Standard 135-2008, BACnet; A Data Communication Protocol for Building Automation and Control Networks.

Date	August 2023
Vendor Name	Daikin Applied
Product Name	Unit Controller
Product Model Number	Air-Cooled Chiller
Application Software Version	263214205 (AWS) 263220303 (AWV) 251699403 (AGZ-D/AGZ-E) 263222002 (AMZ) G00008028-100 (ADS)
BACnet Firmware Revision	11.42
BACnet Protocol Revision	Version 1 Revision 10

Product Description

The Chiller Unit Controller with BACnet Communication Module is a microprocessor designed to operate the chiller and integrate it into a BACnet building automation system. The unit controller provides normal temperature, static pressure and ventilation control, and alarm monitoring with alarm-specific component shutdown in critical system conditions. Access to temperatures, pressures, operating states, alarm messages, and control parameters is available through an equipment-mounted keypad/display and the BACnet network.

BACnet Standardized Device Profile

Based on BIBBs supported, the Chiller Unit Controller with optional BACnet Communications Module is a BACnet Building Controller (B-BC). Refer to the section below entitled BACnet Interoperability Building Blocks (BIBBs) Supported for a complete listing of BIBBS.

- ☐ 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
Data Sharing – COV – B	DS-COV-B
Data Sharing – ReadProperty – A	DS-RP-A
Data Sharing – ReadPropertyMultiple – A	DS-RPM-A
Data Sharing – WriteProperty – A	DS-WP-A
Data Sharing – COV – A	DS-COV-A
Alarm & Event – Notification Internal - B	AE-N-I-B
Alarm & Event – AcknowledgeAlarm - B	AE-ACK-B
Alarm & Event – ACK –B	AE-ACK-B
Alarm & Event – Information - B	AE-INFO-B
Alarm & Event – Alarm Summary - B	AE-ASUM-B
Alarm & Event – Event-Enrollment Summary - B	AE-ESUM-B
Scheduling – Internal - B	SCHED-I-B
Scheduling – External - B	SCHED-E-B
Trending – Viewing and Modifying Trends Internal – B	T-VMT-I-B
Trending – Automated Trend Retrieval – B	T-ATR-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 – Device Communication Control – B	DM-DCC-B
Device Management – TimeSynchronization – B	DM-TS-B
Device Management – UTCTimeSynchronization – B	DM-UTS-B
Device Management – Reinitialize Device – B	DM-RD-B
Device Management – List Manipulation – B	DM-LM-B
Device Management – Object Creation and Deletion – B	DM-OCD-B
Device Management – Backup and Restore – B	DM-BR-B
Network Management – Connection Establishment – A	NM-CE-A

Standard Object Types Supported

Object-Type	Creatable	Deleteable	Optional Properties Supported	Writeable Properties Not Required To Be Writeable
Analog Input	☐	☐	Description High_Limit Low_Limit COV_Increment Notification_Class Reliability Max_Pres_Value Min_Pres_Value Deadband Acked_Transitions Event_Enable Notify_Type Limit_Enable Time_Delay Event_Time_Stamps	Present_Value[1] COV_Increment[2] Event_Enable Limit_Enable[3]
Analog Output	☐	☐	Description Reliability Min_Pres_Value Max_Pres_Value COV_Increment Time_Delay Notification_Class High_Limit Low_Limit Deadband Limit_Enable Event_Enable Acked_Transistions Notify_Type Event_Time_Stamps	Out_Of_Service Relinquish_Default High_Limit Low_Limit Deadband Limit_Enable COV_Increment[2] Event_Enable
Analog Value	☐	☐	Description High_Limit Low_Limit COV_Increment Priority_Array Relinquish_Default Notification_Class Reliability Deadband Acked_Transistions Event_Enable Notify_Type Limit_Enable Time_Delay Event_Time_Stamps	Present_Value[1,6] COV_Increment[2] Event_Enable
Binary Input	☐	☐	Description Inactive_Text Active_Text Notification_Class Reliability Acked_Transitions Event_Enable Alarm_Value Notify_Type Time_Delay Event_Time_Stamps Elapsed_Active_Time Time_Of_Active_Time_Reset	Present_Value Event_Enable Elapsed_Active_Time (only 0)

1. Some objects of this type are read only. For those objects, the Present_Value is not commandable or writable.
2. Changes to this property do not take effect until the power is cycled on the unit controller. After changing COV_Increment, you must wait at least one minute before cycling power. Otherwise, this change will not be saved.
3. Thought this property is writable via BACnet, if the object is setup for Intrinsic Reporting, this value will revert to the controller value. This is a safety feature so the network cannot disable alarms from occurring.
4. Writeable only if Out of Service is true. Also limited to multistate or analog.
5. Priority 5 is reserved for the application for commandable objects. BACnet writes at priority 5 will fail.
6. Priority 1 is reserved for the application for commandable objects. BACnet writes at priority 1 will fail.

Object-Type	Creatable	Deleteable	Optional Properties Supported	Writeable Properties Not Required To Be Writeable
Binary Output	☐	☐	Description Reliability Inactive_Text Active_Text Notification_Class Feedback_Value Acked_Transitions Event_Enable Notify_Type Time_Delay Event_Time_Stamps Elapsed_Active_Time Time_Of_Active_Time_Reset	Event_Enable Polarity Feedback_Value Relinquish_Default Elapsed_Active_Time (only 0)
Binary Value	☐	☐	Description Inactive_Text Active_Text Priority_Array Relinquish_Default Notification_Class Reliability Acked_Transitions Event_Enable Alarm_Value Notify_Type Time_Delay Event_Time_Stamps Elapsed_Active_Time Time_Of_Active_Time_Reset	Acked_Transitions Event_Enable Present_Value[1,5] Elapsed_Active_Time (only 0)
Calendar	☐	☐	Description	Date_List (Max 10)
Device	☐	☐	Location Description Active_Cov_Subsription (<=50) ADPU_Segment_Timeout Local_Time Local_Date UTC_Offset Daylight_Savings_Status Max_Master (MS/TP only) Max_Info_Frames (MS/TP only) Max_Segments_Accepted Configuration_Files Last_Restore_Time Backup_Failure_Timeout	Description Location Max_ADPU_Length_Accepted(1476>= x >=50) UTC_Offset Max_Segments_Accepted ADPU_Segment_Timeout (>100) APDU_Timeout (>100) Number_Of_APDU_Retries Segmentation_Supported Max_Master (MS/TP only) Max_Info_Frames (MS/TP only)
Event_Enrollment	☒	☒		Object_Name Event_Type Notify_Type Event_Parameters Object_Property_Reference Event_Enable Notification_Class
File	☐	☐	Description	

1. Some objects of this type are read only. For those objects, the Present_Value is not commandable or writable.
2. Changes to this property do not take effect until the power is cycled on the unit controller. After changing COV_Increment, you must wait at least one minute before cycling power. Otherwise, this change will not be saved.
3. Thought this property is writable via BACnet, if the object is setup for Intrinsic Reporting, this value will revert to the controller value. This is a safety feature so the network cannot disable alarms from occurring.
4. Writeable only if Out of Service is true. Also limited to multistate or analog.
5. Priority 5 is reserved for the application for commandable objects. BACnet writes at priority 5 will fail.
6. Priority 1 is reserved for the application for commandable objects. BACnet writes at priority 1 will fail.

Object-Type	Creatable	Deleteable	Optional Properties Supported	Writeable Properties Not Required To Be Writeable
Multi-State Input	☐	☐	Description State_Text Notification_Class Acked_Transitions Event_Enable Notify_Type Time_Delay Alarm_Values Fault_Values Reliability Event_Time_Stamps	Present_Value(if Out Of Service=True) Out_Of_Service Event_Enable Alarm_Values (max 16) Fault_Values (max 16)
Multi-State Output	☐	☐	Description Reliability State_Text Notification_Class Acked_Transitions Event_Enable Notify_Type Time_Delay Event_Time_Stamps Feedback_Value	Event_Enable Relinquish_Default (1…Number_Of_States)
Notification Class	☐	☐	Description	Recipient_List (Max 20) Priority Ack_Required
Schedule	☐	☐	Description Weekly_Schedule Exception_Schedule	Present_Value[4] Schedule_Default Effective_Period Weekly_Schedule (Max 6 per day) Priority_For_Writing (1..16) Exception_Schedule List_Of_Object_Property_Refs
Multi-State Value	☐	☐	Description Priority_Array Relinquish_Default Notification_Class Reliability Acked_Transitions Event_Enable Alarm_Values Fault_Values Notify_Type Time_Delay Event_Time_Stamps State_Text	Present_Value[1] Event_Enable
Trend_Log	☐	☐	Description Start_Time Stop_Time Log_Device_Object_Property Log_Interval Client_COV_Increment Notification_Threshold Records_Since_Notification Last_Notify_record Notification_Class Event_Enable Acked_Transistions Notify_Type Event_Time_Stamps	Start_Time Stop_Time Log_Device_Object_Property Log_Interval Client_COV_Increment Stop_When_Full Notification_Threshold Event_Enable

1. Some objects of this type are read only. For those objects, the Present_Value is not commandable or writable.
2. Changes to this property do not take effect until the power is cycled on the unit controller. After changing COV_Increment, you must wait at least one minute before cycling power. Otherwise, this change will not be saved.
3. Thought this property is writable via BACnet, if the object is setup for Intrinsic Reporting, this value will revert to the controller value. This is a safety feature so the network cannot disable alarms from occurring.
4. Writeable only if Out of Service is true. Also limited to multistate or analog.
5. Priority 5 is reserved for the application for commandable objects. BACnet writes at priority 5 will fail.
6. Priority 1 is reserved for the application for commandable objects. BACnet writes at priority 1 will fail.

Data Link Layer Options

☒ BACnet IP, (Annex J)

☐ BACnet IP, (Annex J), Foreign Device

☒ 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
Window Size: 4 for IP and 1 for MS/TP

☒ Segmented responses supported
Window Size: 4 for IP and 1 for MS/TP

Device Address Binding

Static Device Binding ☐ Yes ☒ No

Networking Options

☐ Router, Clause 6 – List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS/TP, etc.

☐ Annex H, BACnet Tunneling Router over IP

☐ BACnet/IP Broadcast Management Device (BBMD)

Number of BDT entries:
Does the BBMD Support registration
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.

BACnet Protocol Implementation Conformance Statement

This section contains the Protocol Implementation Conformance Statement (PICS) for the Chiller Unit Controller as required by ANSI/ASHRAE (American National Standards Institute/American Society of Heating, Refrigeration, and Air Conditioning Engineers) Standard 135-2008, BACnet; A Data Communication Protocol for Building Automation and Control Networks.

Date	August 2023
Vendor Name	Daikin Applied
Product Name	Unit Controller
Product Model Number	Water-Cooled Chiller
Application Software Version	G00078761_100_060 (WME, B Vintage) 263224104 (WWV)
BACnet Firmware Revision	11.42
BACnet Protocol Revision	Version 1 Revision 10

Product Description

The Chiller Unit Controller with BACnet Communication Module is a microprocessor designed to operate the chiller and integrate it into a BACnet building automation system. The unit controller provides normal temperature, static pressure and ventilation control, and alarm monitoring with alarm-specific component shutdown in critical system conditions. Access to temperatures, pressures, operating states, alarm messages, and control parameters is available through an equipment-mounted keypad/display and the BACnet network.

BACnet Standardized Device Profile

Based on BIBBs supported, the Chiller Unit Controller with optional BACnet Communications Module is a BACnet Building Controller (B-BC). Refer to the section below entitled BACnet Interoperability Building Blocks (BIBBs) Supported for a complete listing of BIBBS.

- ☐ 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
Data Sharing – COV – B	DS-COV-B
Data Sharing – ReadProperty – A	DS-RP-A
Data Sharing – ReadPropertyMultiple – A	DS-RPM-A
Data Sharing – WriteProperty – A	DS-WP-A
Data Sharing – COV – A	DS-COV-A
Alarm & Event – Notification Internal - B	AE-N-I-B
Alarm & Event – AcknowledgeAlarm - B	AE-ACK-B
Alarm & Event – ACK –B	AE-ACK-B
Alarm & Event – Information - B	AE-INFO-B
Alarm & Event – Alarm Summary - B	AE-ASUM-B
Alarm & Event – Event-Enrollment Summary - B	AE-ESUM-B
Scheduling – Internal - B	SCHED-I-B
Scheduling – External - B	SCHED-E-B
Trending – Viewing and Modifying Trends Internal – B	T-VMT-I-B
Trending – Automated Trend Retrieval – B	T-ATR-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 – Device Communication Control – B	DM-DCC-B
Device Management – TimeSynchronization – B	DM-TS-B
Device Management – UTCTimeSynchronization – B	DM-UTS-B
Device Management – Reinitialize Device – B	DM-RD-B
Device Management – List Manipulation – B	DM-LM-B
Device Management – Object Creation and Deletion – B	DM-OCD-B
Device Management – Backup and Restore – B	DM-BR-B
Network Management – Connection Establishment – A	NM-CE-A

Standard Object Types Supported

Object-Type	Creatable	Deleteable	Optional Properties Supported	Writeable Properties Not Required To Be Writeable
Analog Input	☐	☐	Description High_Limit Low_Limit COV_Increment Notification_Class Reliability Max_Pres_Value Min_Pres_Value Deadband Acked_Transitions Event_Enable Notify_Type Limit_Enable Time_Delay Event_Time_Stamps	Present_Value[1] COV_Increment[2] Event_Enable Limit_Enable[3]
Analog Output	☐	☐	Description Reliability Min_Pres_Value Max_Pres_Value COV_Increment Time_Delay Notification_Class High_Limit Low_Limit Deadband Limit_Enable Event_Enable Acked_Transistions Notify_Type Event_Time_Stamps	Out_Of_Service Relinquish_Default High_Limit Low_Limit Deadband Limit_Enable COV_Increment[2] Event_Enable
Analog Value	☐	☐	Description High_Limit Low_Limit COV_Increment Priority_Array Relinquish_Default Notification_Class Reliability Deadband Acked_Transistions Event_Enable Notify_Type Limit_Enable Time_Delay Event_Time_Stamps	Present_Value[1,6] COV_Increment[2] Event_Enable
Binary Input	☐	☐	Description Inactive_Text Active_Text Notification_Class Reliability Acked_Transitions Event_Enable Alarm_Value Notify_Type Time_Delay Event_Time_Stamps Elapsed_Active_Time Time_Of_Active_Time_Reset	Present_Value Event_Enable Elapsed_Active_Time (only 0)
Binary Output	☐	☐	Description Reliability Inactive_Text Active_Text Notification_Class Feedback_Value Acked_Transitions Event_Enable Notify_Type Time_Delay Event_Time_Stamps Elapsed_Active_Time Time_Of_Active_Time_Reset	Event_Enable Polarity Feedback_Value Relinquish_Default Elapsed_Active_Time (only 0)

1. Some objects of this type are read only. For those objects, the Present_Value is not commandable or writable.
2. Changes to this property do not take effect until the power is cycled on the unit controller. After changing COV_Increment, you must wait at least one minute before cycling power. Otherwise, this change will not be saved.
3. Thought this property is writable via BACnet, if the object is setup for Intrinsic Reporting, this value will revert to the controller value. This is a safety feature so the network cannot disable alarms from occurring.
4. Writeable only if Out of Service is true. Also limited to multistate or analog.
5. Priority 5 is reserved for the application for commandable objects. BACnet writes at priority 5 will fail.
6. Priority 1 is reserved for the application for commandable objects. BACnet writes at priority 1 will fail.

Object-Type	Creatable	Deleteable	Optional Properties Supported	Writeable Properties Not Required To Be Writeable
Binary Value	☐	☐	Description Inactive_Text Active_Text Priority_Array Relinquish_Default Notification_Class Reliability Acked_Transitions Event_Enable Alarm_Value Notify_Type Time_Delay Event_Time_Stamps Elapsed_Active_Time Time_Of_Active_Time_Reset	Acked_Transitions Event_Enable Present_Value[1,5] Elapsed_Active_Time (only 0)
Calendar	☐	☐	Description	Date_List (Max 10)
Device	☐	☐	Location Description Active_Cov_Subsription (<=50) ADPU_Segment_Timeout Local_Time Local_Date UTC_Offset Daylight_Savings_Status Max_Master (MS/TP only) Max_Info_Frames (MS/TP only) Max_Segments_Accepted Configuration_Files Last_Restore_Time Backup_Failure_Timeout	Description Location Max_ADPU_Length_Accepted(1476>= x >=50) UTC_Offset Max_Segments_Accepted ADPU_Segment_Timeout (>100) APDU_Timeout (>100) Number_Of_APDU_Retries Segmentation_Supported Max_Master (MS/TP only) Max_Info_Frames (MS/TP only)
Event_Enrollment	☒	☒		Object_Name Event_Type Notify_Type Event_Parameters Object_Property_Reference Event_Enable Notification_Class
File	☐	☐	Description	
Multi-State Input	☐	☐	Description State_Text Notification_Class Acked_Transitions Event_Enable Notify_Type Time_Delay Alarm_Values Fault_Values Reliability Event_Time_Stamps	Present_Value(if Out Of Service=True) Out_Of_Service Event_Enable Alarm_Values (max 16) Fault_Values (max 16)
Multi-State Output	☐	☐	Description Reliability State_Text Notification_Class Acked_Transitions Event_Enable Notify_Type Time_Delay Event_Time_Stamps Feedback_Value	Event_Enable Relinquish_Default (1…Number_Of_States)
Notification Class	☐	☐	Description	Recipient_List (Max 20) Priority Ack_Required
Schedule	☐	☐	Description Weekly_Schedule Exception_Schedule	Present_Value[4] Schedule_Default Effective_Period Weekly_Schedule (Max 6 per day) Priority_For_Writing (1..16) Exception_Schedule List_Of_Object_Property_Refs

1. Some objects of this type are read only. For those objects, the Present_Value is not commandable or writable.
2. Changes to this property do not take effect until the power is cycled on the unit controller. After changing COV_Increment, you must wait at least one minute before cycling power. Otherwise, this change will not be saved.
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Object-Type	Creatable	Deleteable	Optional Properties Supported	Writeable Properties Not Required To Be Writeable
Multi-State Value	☐	☐	Description Priority_Array Relinquish_Default Notification_Class Reliability Acked_Transitions Event_Enable Alarm_Values Fault_Values Notify_Type Time_Delay Event_Time_Stamps State_Text	Present_Value1 Event_Enable
Trend_Log	☐	☐	Description Start_Time Stop_Time Log_Device_Object_Property Log_Interval Client_COV_Increment Notification_Threshold Records_Since_Notification Last_Notify_record Notification_Class Event_Enable Acked_Transistions Notify_Type Event_Time_Stamps	Start_Time Stop_Time Log_Device_Object_Property Log_Interval Client_COV_Increment Stop_When_Full Notification_Threshold Event_Enable

1. Some objects of this type are read only. For those objects, the Present_Value is not commandable or writable.
2. Changes to this property do not take effect until the power is cycled on the unit controller. After changing COV_Increment, you must wait at least one minute before cycling power. Otherwise, this change will not be saved.
3. Thought this property is writable via BACnet, if the object is setup for Intrinsic Reporting, this value will revert to the controller value. This is a safety feature so the network cannot disable alarms from occurring.
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Data Link Layer Options

☒ BACnet IP, (Annex J)

☐ BACnet IP, (Annex J), Foreign Device

☒ 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
Window Size: 4 for IP and 1 for MS/TP

☒ Segmented responses supported
Window Size: 4 for IP and 1 for MS/TP

Device Address Binding

Static Device Binding ☐ Yes ☒ No

Networking Options

☐ Router, Clause 6 – List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS/TP, etc.

☐ Annex H, BACnet Tunneling Router over IP

☐ BACnet/IP Broadcast Management Device (BBMD)

Number of BDT entries:
Does the BBMD Support registration 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.

Appendix B: Unit Controller Keypad Menus

Use Table 26 to find and access network parameters via the Chiller Unit Controller keypad/display. Data points are listed alphabetically along with the path(s) to the corresponding keypad menu screen.

Table 26: Chiller Unit Controller Keypad Menu Path

Data Point	Keypad Menu Path
Active Capacity Limit (Output)	No Keypad Equivalent
Active Setpoint	Main Menu_Active Setpt=
Actual Capacity	Main Menu_Unit Capacity=
Alarm Digital Output	No Keypad Equivalent
Application Version	Main Menu_About Chiller_Unit S/N=
Capacity Limit (LonWorks)	No Keypad Equivalent
Capacity Limit Setpoint - Network	Main Menu_View/Set Unit_Status/Settings_Netwrk Cap Lim=
Chiller Capacity Limited	No Keypad Equivalent
Chiller Current	Main Menu_View/Set Unit_Power Conservation_Unit Current=
Chiller Enable (LonWorks)	No Keypad Equivalent
Chiller Enable Output	Main Menu_View/Set Unit_Status/Settings_Netwrk En SP=
Chiller Enable Setpoint	No Keypad Equivalent
Chiller Local/Network	Main Menu_View/Set Unit_Status/Settings_Control Source=
Chiller Location	No Keypad Equivalent
Chiller Mode (LonWorks)	No Keypad Equivalent
Chiller Mode Output	Main Menu_View/Set Unit_Status/Settings_Netwrk Mode SP=
Chiller Mode Setpoint - Network	No Keypad Equivalent
Chiller Model	Main Menu_About Chiller_Model #=
Chiller Network Communication Failure Warning	No Keypad Equivalent
Chiller On/Off	No Keypad Equivalent
Chiller Status	No Keypad Equivalent
Circuit Select (LonWorks)	No Keypad Equivalent
Compressor Select	No Keypad Equivalent
Comp Shutdown - Refrig Charge	No Keypad Equivalent
Clear Alarm - Network	No Keypad Equivalent
Compressor Controller Communication Failed - Circuit #n	No Keypad Equivalent
Compressor Current	Main Menu_View/Set Circuit_Circuit #1_Comp 1_Current= OR Main Menu_View/Set Circuit_Circuit #2_Comp 1_Current= OR Main Menu_View/Set Circuit_Circuit #3_Comp 1_Current=
Compressor Discharge Refrigerant Temperature	Main Menu_View/Set Circuit_Circuit #1_Data_Discharge Temp= OR Main Menu_View/Set Circuit_Circuit #2_Data_Discharge Temp= OR Main Menu_View/Set Circuit_Circuit #3_Data_Discharge Temp= OR Main Menu_View/Set Circuit_Circuit #4_Data_Discharge Temp= OR
Compressor Percent RLA	Main Menu_View/Set Circuit_Circuit #1_Comp 1_Percent RLA= OR Main Menu_View/Set Circuit_Circuit #2_Comp 1_Percent RLA= OR Main Menu_View/Set Circuit_Circuit #3_Comp 1_Percent RLA=
Compressor Power	No Keypad Equivalent
Compressor Run Hours	Main Menu_View/Set Circuit_Circuit #1_Comp 1_Run Hours=OR Main Menu_View/Set Circuit_ Circuit #1_Comp 2_Run Hours= OR Main Menu_View/Set Circuit_ Circuit #1_Comp 3_Run Hours= OR Main Menu_View/Set Circuit_ Circuit #2_Comp 1_Run Hours= OR Main Menu_View/Set Circuit_ Circuit #2_Comp 2_Run Hours= OR Main Menu_View/Set Circuit_ Circuit #2_Comp 3_Run Hours= OR Main Menu_View/Set Circuit_ Circuit #3_Comp 1_Run Hours= OR Main Menu_View/Set Circuit_ Circuit #4_Comp 1_Run Hours=
Compressor Starts	Main Menu_View/Set Circuit_ Circuit #1_Comp 1_No. Of Starts= OR Main Menu_View/Set Circuit_ Circuit #1_Comp 2_No. Of Starts= OR Main Menu_View/Set Circuit_ Circuit #1_Comp 3_No. Of Starts= OR Main Menu_View/Set Circuit_ Circuit #2_Comp 1_No. Of Starts= OR Main Menu_View/Set Circuit_ Circuit #2_Comp 2_No. Of Starts= OR Main Menu_View/Set Circuit_ Circuit #2_Comp 3_No. Of Starts= OR Main Menu_View/Set Circuit_ Circuit #3_Comp 1_No. Of Starts= OR Main Menu_View/Set Circuit_ Circuit #4_Comp 1_No. Of Starts=
Compressor Suction Refrigerant Temperature	Main Menu_View/Set Circuit_Circuit #1_Data_Suction Temp= OR Main Menu_View/Set Circuit_Circuit #2_Data_Suction Temp= OR Main Menu_View/Set Circuit_Circuit #3_Data_Suction Temp= OR Main Menu_View/Set Circuit_Circuit #4_Data_Suction Temp=
Compressor Voltage	No Keypad Equivalent
Condenser Refrigerant Pressure	Main Menu_View/Set Circuit_Circuit #1_Data_Cond Pressure= OR Main Menu_View/Set Circuit_Circuit #2_Data_Cond Pressure = OR Main Menu_View/Set Circuit_Circuit #3_Data_Cond Pressure = OR Main Menu_View/Set Circuit_Circuit #4_Data_Cond Pressure =

Data Point	Keypad Menu Path
Condenser Saturated Refrigerant Temperature	Main Menu_View/Set Circuit_Circuit #1_Data_Cond Sat Temp= OR Main Menu_View/Set Circuit_Circuit #2_ Data_Cond Sat Temp = OR Main Menu_View/Set Circuit_Circuit #3_ Data_Cond Sat Temp = OR Main Menu_View/Set Circuit_Circuit #4_ Data_Cond Sat Temp =
Cool Setpoint - Network	Main Menu_View/Set Unit_Status/Settings_Netwrk Cool SP=
Cool Setpoint (LONWORKS)	No Keypad Equivalent
Current Alarm Descriptor	Alarms_Active Alarms
Current Date and Time	(Chiller Date & Time) Main Menu_View/Set Unit_Date/TimeSchedules_Actual Time= AND Main Menu_View/Set Unit_Date/TimeSchedules_Actual Date=
Default Values (LONWORKS)	No Keypad Equivalent
Evaporator Entering Fluid Temperature	Main Menu_Evaporator EWT=
Evaporator Flow Switch Status	No Keypad Equivalent
Evaporator Leaving Fluid Temperature	Main Menu_Evaporator LWT=
Evaporator LWT #n	Main Menu_View/Set Circuit_Circuit #1_Status/Settings_Evap Leaving Water Temp= OR Main Menu_View/Set Circuit_Circuit #2_Status/Settings_Evap Leaving Water Temp= OR Main Menu_View/Set Circuit_Circuit #3_Status/Settings_Evap Leaving Water Temp=
Evaporator Pump Run Hours	Main Menu_View/Set Unit_Status/Settings_Evap Pmp 1 Hrs= AND Main Menu_View/Set Unit_Status/Settings_Evap Pmp 2 Hrs=
Evaporator Pump Status	No Keypad Equivalent
Evaporator Refrigerant Pressure	Main Menu_View/Set Circuit_Circuit #1_Data_Evap Pressure= AND Main Menu_View/Set/Circuit_Circuit #2_Data_Evap Pressure= AND Main Menu_View/Set/Circuit_Circuit #3_Data_Evap Pressure= AND Main Menu_View/Set/Circuit_Circuit #4_Data_Evap Pressure= AND
Evaporator Saturated Refrigerant Temperature	Main Menu_View/Set Circuit_Circuit #1_Data_Evap Sat Temp= AND Main Menu_View/Set Circuit _Circuit #2_Data_Evap Sat Temp= AND Main Menu_View/Set Circuit _Circuit #3_Data_Evap Sat Temp= AND Main Menu_View/Set Circuit _Circuit #4_Data_Evap Sat Temp=
EXV Controller Communication Failed - Circuit #n	No keypad equivalent
Fan Controller Communication Failed	No keypad equivalent
Ice Setpoint - Network	Main Menu_View/Set Unit_Status/Settings_Netwrk Ice SP=
Ice Setpoint (LONWORKS)	No Keypad Equivalent
Comp Shutdown - Refrig Charge	No Keypad Equivalent
Low Refrigerant Charge - Circuit #n	No Keypad Equivalent
Maximum Send Time (LONWORKS)	Main Menu_View/Set Unit_LON Setup_Max Send Time=
Minimum Send Time (LONWORKS)	Main Menu_View/Set Unit_LON Setup_Min Send Time=
Oil Feed Pressure	No Keypad Equivalent
Outdoor Air Temperature	Main Menu_View/Set Unit_Temperatures_Outside Air=
Pump Select	No Keypad Equivalent
Receive Heartbeat (LONWORKS)	Main Menu_View/Set Unit_LON Setup_Rcv Heartbeat=
Request (LONWORKS)	No Keypad Equivalent
Run Enabled	No Keypad Equivalent
Software Identification (Major Version)	No Keypad Equivalent
Software Identification (Minor Version)	No Keypad Equivalent
Status	No Keypad Equivalent
Total Kilowatts	Main Menu_View/Set Unit kW Power_Conservation_Total kW
Units	Main Menu_View/Set Unit_BACnet MSTP Setup_Unit Support= OR Main Menu_View/Set Unit_BACnet IP Setup_Unit Support=
VFD Temp	No Keypad Equivalent

Daikin Applied Training and Development

Now that you have made an investment in modern, efficient Daikin Applied 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 Applied 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.

This document contains the most current product information as of this printing. For the most up-to-date product information, please go to www.DaikinApplied.com.

Products manufactured in an ISO Certified Facility.