Engineering Data

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MicroTech® III Chiller Unit Controller Protocol Information

BACnet® Networks
LONWORKS® Networks

- **Pathfinder™ Air-Cooled Screw Chiller, Model AWS (with or without VFD)**
- **Air-Cooled Global Scroll Chiller, Model AGZ-D**

a member of DAIKIN group

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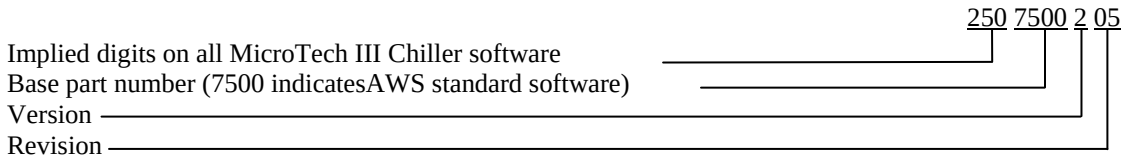
Revision History

ED 15120	November 2009	Preliminary release.
ED 15120-1	April 2010	Changes made to support AWS configured with VFDs: Added new points. Removed Mainenance Alarms and Oil Level Low Alarm. Added 5 Compressor Shutdown Fault alarms. Added Bad Current Limit Input Warning alarm and corresponding variables #s to Warning code and Warning index. Added Unload-Compressor Motor Current High & Inhibit Load Compressor Motor Current High Problem alarms Added the Option Controller Communication Failed Warning.
ED 15120-2	October 2010	Changed Compressor Starts. It was incorrectly marked as a read-only point via BACnet. This point is read/write through BACnet and read-only through LON. Added AGZ-D model to document.

Software Revision

Keypad Menu Path Main Menu_About Chiller_App Version=

The software part number is encoded in the controller's memory and is available for display on the keypad/display. The part number is available via BACnet® system integration tools. An example of the software part number codification is as follows:



This document supports versions 2507500205 (AWS) and 251699000 (AGZ-D) of the standard MicroTech III 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.

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

Reference Documents

Company	Number	Title	Source
McQuay International	ED 15122	MicroTech® III Chiller Unit Controller Protocol Implementation Conformance Statement (PICS)	www.mcquay.com
McQuay International	IM 966	MicroTech III Chiller Unit Controller BACnet® IP Communication Module Installation Manual	www.mcquay.com
McQuay International	IM 967	MicroTech III Chiller Unit Controller BACnet Communication Module (MS/TP) Installation Manual	www.mcquay.com
McQuay International	IM 968	MicroTech® III Chiller Unit Controller LonWorks® Communication Module Installation Manual	www.mcquay.com
McQuay International	IM 1002 (50Hz) IM 997 (60Hz)	Pathfinder™ Air Cooled Chiller Installation Manual	www.mcquay.com
McQuay International	IM 1078	Installation Manual-Air-cooled Scroll Compressor Chillers	www.mcquay.com
McQuay International	OM 1051	Pathfinder Air Cooled Chiller Operation Manual	www.mcquay.com
McQuay International	OMM 1087	Operating and Maintenance Manual-Air-cooled Scroll Compressor Chillers	www.mcquay.com
American Society of Heating, Refrigerating and Air-Conditioning Engineers	ANSI/ ASHRAE 135-2004	BACnet- A Data Communication Protocol for Building Automation and Control Networks	www.ashrae.org
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

Notice

McQuay International reserves the right to change any information contained herein without prior notice. The user is responsible for determining whether this product is appropriate for his or her application.

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Limited Warranty

Consult your local McQuay Representative for warranty details. Refer to Form 933-430285Y. To find your local McQuay Representative, go to www.mcquay.com.

Introduction

This document contains the necessary information you need to incorporate a MicroTech® III Chiller Unit Controller from McQuay International into a building automation system (BAS). It lists all BACnet® properties, LONWORKS® variables, and corresponding MicroTech III 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.

Unit Controller Data Points

The MicroTech III Chiller Unit Controller contains data points or unit variables that are accessible from three user interfaces: the unit keypad/display, a BACnet network, 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 the chiller operation manuals (available on www.mcquay.com) for keypad details.

Protocol Definitions

The MicroTech III Chiller Unit Controller can be configured in either an interoperable BACnet or LONWORKS network. The unit controller must have the corresponding MicroTech III communication module installed for network integration. There are three MicroTech III communication modules available: 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 LonTalk 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.

Basic Protocol Information

Setting Unit Controller Communications Parameters

There are various communication parameters involved in setting up the unit controller for proper communication 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. Table 1 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.**

Table 1. 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**	**N/A**	**N/A**
MSTP MAC Address[2]	**N/A**	**18**	**N/A**
MSTP 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**	**0Sec**
Max Master	**N/A**	**127**	**N/A**
Max Info Frames	**N/A**	**1**	**N/A**
Term Resistor	**N/A**	**No[5]**	**N/A**

Notes:

1. These addresses are used if DHCP (Dynamic Host Connfiguratin Property) is set to Off. For changes to these parameters to take effect, use the keypad display and set Apply Changes on the BACnet IP Setup menu to Yes. This will cause the power on the chiller unit controller to reset.
2. The MSTP MAC Address is set via the keypad/display. You must cycle power after changing it for the changes to take effect.
3. 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.
4. 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 must 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).

BACnet Networks

Compatibility

The MicroTech III 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). However, it is not BTL listed. The PICS is located at the end of this manual or the separate PICS document, ED 15121 (available on www.mcquay.com.)

BACnet Objects

MicroTech III 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 MicroTech III Chiller Unit Controller; each occurrence or instance has different properties and controls different unit variables or data points. Each instance is designated with a unique instance index. Some properties can be adjusted (read/write properties, e.g., setpoints) from the network and others can only be interrogated (read-only properties, e.g., status information).

Each data point accessible from a BACnet network is described with a table that gives the Object Identifier, Property Identifier, Full BACnet Reference or path, and the Name enumeration of the property.

Example of BACnet Data Point

Keypad Menu Path Main Menu_View/Set Unit_Status/Settings_Netwrk En SP=

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Value	5	1	Present Value	85
Object Name				
ChillerEnableOutput				

Property Values
0 = Disable(Inactive) 1 = Enable(Active)

Object Identifier

Object Identifiers are each designated with an Object type as defined in the BACnet specification. The first column of the data point definition gives the object type. This object happens to be Chiller Enable Output (See page 43.)

The object identifier is a property of the object that you can read from the object. The name of the property is "Object_Identifier" and the property identifier is 75.

Each object in the MicroTech III Chiller Unit Controller has a unique identifier. BACnet object identifiers are two-part numbers of BACnet Object Identifier data type. The first part identifies the object type (the first 10 bits of the 32-bit BACnet Object Identifier [See ANSI/ASHRAE 135-2004 BACnet A Data Communication Protocol for Building Automation and Control Networks]). The first column of the data point definition gives the object type. The second part identifies the instances of that particular object type (the last 22 bits of the 32-bit BACnet Object Identifier).

The object identifier is shown in the data points listing as two numbers. The first number is shown in the Type ID column and designates the Object type enumeration. The second number is shown in the Instance column and designates the instance of that particular object type.

The object identifier is a property of the object that you can read from the object code. The name of the property is "Object_Identifier" and the property identifier is 75. The ASHRAE BACnet specification reserves the first 128 numbers for ASHRAE defined objects. Manufacturers may define additional object types and assign a number above 127 as long as they conform to the requirements of the ASHRAE BACnet specification.

Each object also has a name. Object names are character strings. The object name is a property of the object that you can read from the object. The name of the property is "Object_Name" and the property identifier is 77.

Objects are sometimes referred to as an object type and instance number as they are in the BACnet specification. The example object above would be: Binary Value, Instance 1.

Property Identifier

Each object has a number of properties or attributes. Each property has a unique identifier of BACnet Property Identifier data type. Property identifiers are an enumerated set; a number identifies each member. The Property Identifier enumeration number is shown in the Property ID column. In the example above the property identifier is 85.

Property Name

Each property also has a unique name. Property names are character strings and shown in the Property Name column. In the example above the property name is Present Value.

Object Name

The Object Name is the name of the object in the device. Object Names must be unique within each MicroTech III Chiller Unit Controller. In the example above the object name is ChillerEnableOutput.

Enumerated Values

Some properties are standard data types and some are enumerated sets. If the property value is an enumerated set, all enumerated values and corresponding meaning are given in the Enumeration column of the data point listing.

MicroTech III Chiller Unit Controller Device Object

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

Device Object Identifier

The MicroTech III Chiller Unit Controller Device Object Identifier uniquely specifies the unit within the network. The device object type for all devices is fixed by ASHRAE at 8. Therefore the device object instance number must be unique. The initial Device Object identifier is set at manufacturing. The device object identifier can be read from the unit controller. The name of the property is "Object_Identifier" and the property identifier is 75.

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 object instance number can be changed via the keypad display. You must cycle power for the change to take effect.

⚠ 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.

Device Object Name

The Device Object Name uniquely specifies a device in the network. It must be unique in the network. The device name for the MicroTech III Chiller Unit Controller device is to be determined. The device name is the "prefix" of all object names in the MicroTech III Chiller Unit Controller. All objects include the device name and a period "." preceding the object name.

The Device Object name is also available to the network in the device. The property name is "Object_Name" and property identifier is 77. For a BACnet IP card, the default Object Name is POL908_###### where ###### is the last 6 digits of the MAC address. For a BACnet MS/TP card, the default Object Name is POL904_######## where ######## is computed from the production number and date code.

Device Object Properties

The device object contains many other informative properties as shown in Table 2.

Table 2. MicroTech III Chiller Unit Controller Device Object Properties

Property	Identifier	Default Value	Data Type
Object Identifier	75	Device, variable	BACnetObjectIdentifier
Object Name	77	POL908_FF2BEE[1]	Character String
Object Type	79	8	BACnetObjectType
System Status	112		BACnetDeviceStatus
Vendor Name	121	McQuay International	Character String
Vendor Identifier	120	3	Unsigned 16
Model Name	70	AWS or AGZ	Character String
Firmware Version	44	variable	Character String
Application Software Revision	12	variable	Character String
Location	58		Character String
Description	28	AWS Screw Chiller	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

Property	Identifier	Default Value	Data Type
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 BACnetCOVSubsriptions

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 module.
2. While the MicroTech III Chiller Unit Controller supports the entire set of object types, not all object types are used. See the Object List for details.
3. The BACnet communication module and the MicroTech III 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 resynchronize 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 Addressing

The BACnet/Internet Protocol (BACnet/IP) address of the MicroTech III 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 MicroTech Chiller Unit Controller is 47808 (BAC0 in hexadecimal).

The device object of the MicroTech III 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 will display the current IP address only when the network is connected.

The MicroTech III 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 MicroTech III 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 MicroTech III 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 Setting Unit Controller Communication Parameters in the Basic Protocol Information section found previously in this document.

Configuring the Unit Controller

The MicroTech III 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 MicroTech III Chiller Unit Controller Operation Manual for unit settings and/or the respective MicroTech III Communication Module Installation Manual for configuring network parameters.

BACnet MS/TP Network Addressing

The BACnet MS/TP device address (Media Access Control [MAC] address) of the MicroTech III 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 Setting Unit Controller Communications Parameters in the Basic Protocol Information section of this document.

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 these variables and parameters available in the MicroTech III Chiller Unit Controller.

Compatibility

The MicroTech III Chiller Unit Controller with LONWORKS communication module operates in accordance with the Chiller functional profile of the LonMark Interoperability standard.

LonWorks Variables

MicroTech III 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.

Each data point accessible from a LONWORKS network is described with a table that gives the LONWORKS Name, Profile, SNVT Type, and SNVT Index. If the variable is a configuration variable the table also includes the SCPT Reference and the SCPT Index.

Example of LONWORKS Data Point

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoSuctionTemp	McQuay_Chiller	temp_p	105	two bytes

LONWORKS Name

Each network variable has a name that you use to access the data point. This is the name of the variable from the profile. In the example above the name network variable is nvoSuctionTemp.

Profile

The profile column designates the MicroTech III LONWORKS Communication Module that incorporates this network variable. The variable itself may not be a standard component of that particular profile, but the communications module does implement and it is available to the network. Variables that are part of the standard LonMark Chiller profile are designated as “Chiller” in this column. McQuay-specific variables are designated as “McQuay_Chiller” in this column. It is recommended that you download McQuayChiller Resource Files available on www.McQuay.com.

Resource Files

Resource files contain definitions of functional profiles, network variables types, configuration property types, and enumerations. Resource files are required for displaying McQuay-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.mcquay.com and www.lonmark.org.

External Interface File (XIF)

LonMark guidelines specify exact documentation rules so that proprietary configuration tools are not required to commission and configure LONWORKS devices. The MicroTech III 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.mcquay.com and www.lonmark.org.

SNVT Type
This column gives the name of the standard network variable type from the master list.

SNVT Index
This column gives the number of the standard network variable type from the master list.

SCPT Reference
This column gives the name of the Standard Configuration Parameter Type (SCPT) from the master list.

SCPT Index
This column gives the number of the Standard Configuration Parameter Type (SCPT) from the master list.

Network Considerations

Network Topology
Each MicroTech III LONWORKS Communication Module is equipped with an FTT-10A transceiver for network communications. This transceiver allows for (1) free topology network wiring schemes using twisted pair (unshielded) cable and (2) polarity insensitive connections at each node. These features greatly simplify installation and reduce network commissioning problems. Additional nodes may be added with little regard to existing cable routing.

Free Topology Networks

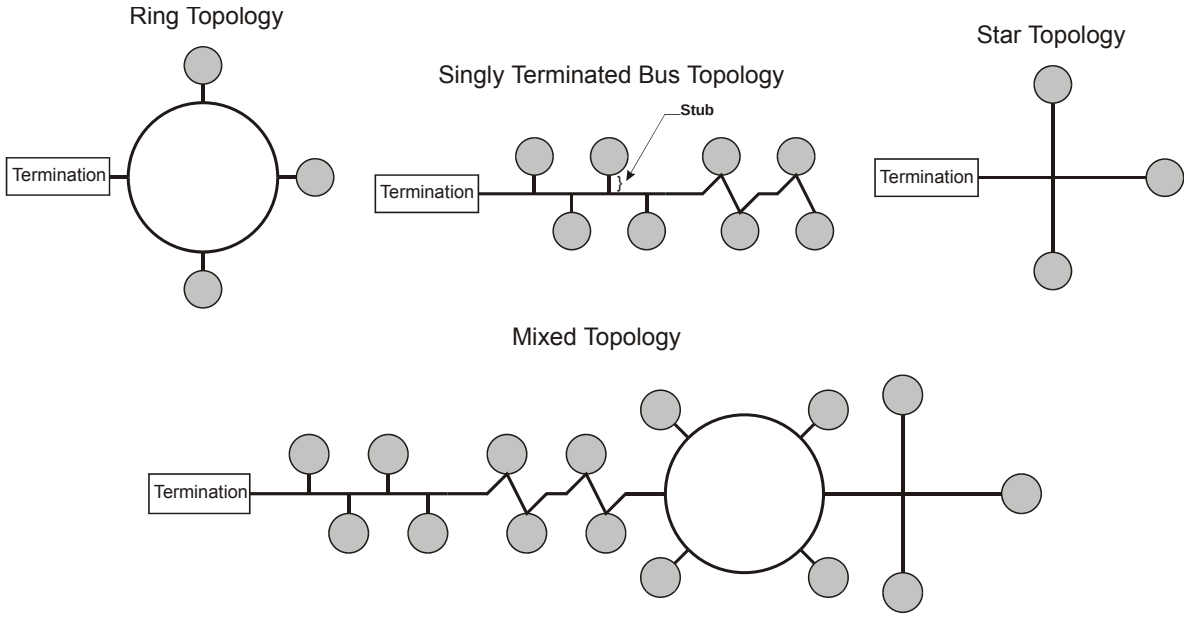
A LONWORKS "free topology network" means that devices (nodes) can be connected to the network in a variety of geometric configurations. For example, devices can be daisy-chained from one device to the next, connected with stub cables branching off from a main cable, connected using a tree or star topology, or any of these configurations can be mixed on the same network as shown in Figure 1. Free topology segments require termination for proper transmission performance. Only one termination is required. It may be placed anywhere along the segment**.** Refer to Echelon LONWORKS FTT-10A Transceiver User's Guide for further details (see Reference Documents section).

Free topology networks may take on the following topologies:

- Bus
- Ring
- Star
- Mixed - Any combination of Bus, Ring, and Star

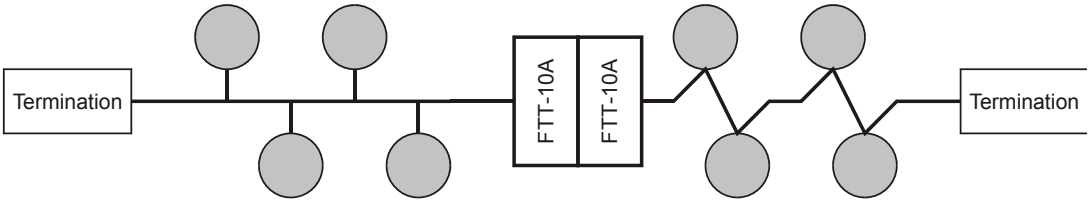
Note: Limitations to wire lengths apply and must be observed.

Figure 1. Singly Terminated Free Topology



A network segment is any part of the free topology network in which each conductor is electrically continuous. Each of the four diagrams is a illustration of a network segment. Some applications may require two or more segments; see "Free Topology Restrictions." If necessary, segments can be joined with FTT-10A-to-FTT-10A physical layer repeaters. See Figure 2. Refer to Echelon LONWORKS FTT-10A Transceiver User's Guide for further details.

Figure 2. Combining Network Segments with a Repeater



Free Topology Restrictions

Although free topology wiring is very flexible, there are restrictions. A summary follows, refer to the Echelon FTT-10A User's Guide for details.

1. The maximum number of nodes per segment is 64.
2. The maximum total bus length depends on the wire size:

Wire Size	Maximum Node-to-Node Length	Maximum Cable Length
24 AWG	820 ft (250 m)	1476 ft (450 m)
22 AWG	1312 ft (400 m)	1640 ft (500 m)
16 AWG	1640 ft (500 m)	1640 ft (500 m)

   The longest cable path between any possible pair of nodes on a segment must not exceed the maximum node-to-node distance. If two or more paths exist between a pair of nodes (e.g., a loop topology), the longest path should be considered. Note that in a bus topology, the longest node-to-node distance is equal to the total cable length.

   a. The total length of all cable in a segment must not exceed the maximum total cable length.

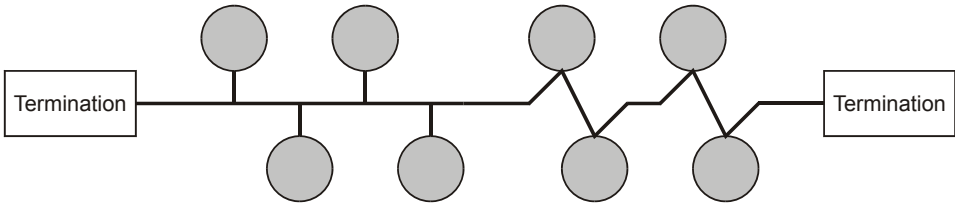
3. One termination is required in each segment. It may be located anywhere along the segment.

Doubly Terminated Networks

You can extend the maximum total cable length without using a repeater by using doubly-terminated network topology. See Figure 3. The trade-offs are (1) this network topology must be rigorously followed during the installation and subsequent retrofits and (2) two terminations must be installed at the ends of the bus for proper transmission performance. Refer to Echelon LONWORKS FTT-10A Transceiver User's Guide.

Note: Limitations to wire lengths apply and must be observed.

Figure 3. Doubly Terminated Network Topology



Doubly Terminated Topology Restrictions

The restrictions on doubly-terminated bus topology are as follows:

1. The maximum number of nodes per segment is 64.
2. The maximum total bus length depends on the wire size:

Wire Size	Maximum Cable Length
24 AWG	2952 ft (900 m)
22 AWG	4590 ft (1400 m)
16 AWG	8855 ft (2700 m)

3. The maximum stub length is 9.8 ft (3 m). The length of the MicroTech III Chiller LONWORKS cable harness stub is 7.2 ft (2.19 m).

   A stub is a piece of cable that is wired between the node and the bus. See Figure 1. Note that if the bus is wired directly to the node, there is no stub, and thus the stub length is zero. If you are wiring to a field terminal strip on a unit, be sure to account for any factory wiring between the terminal strip and the controller. This wiring is considered part of the stub.

4. Two terminations are required in each segment. One must be located at each end of the bus.

Network Cable Termination

LONWORKS network segments require termination for proper data transmission performance. The type and number of terminations depend on network topology. Refer to Echelon LONWORKS FTT-10A Transceiver User's Guide.

LonWorks Network Addressing

Every Neuron Chip has a unique 48-bit Neuron ID or physical address. This address is generally used only at initial installation or for diagnostic purposes. For normal network operation, a device address is used.

Device addresses are defined at the time of network configuration. All device addresses have three parts. The first part is the Domain ID, designating the domain. Devices must be in the same domain in order to communicate with each other. The second part is the Subnet ID that specifies a collection of up to 127 devices that are on a single channel or a set of channels connected by repeaters. There may be up to 255 subnets in a domain. The third part is the Node ID that identifies an individual device within the subnet.

A group is a logical collection of devices within a domain. Groups are assembled with regard for their physical location in the domain. There may be up to 256 groups in domain. A group address is the address that identifies all devices of the group. There may be any number of devices in a group when unacknowledged messaging is used. Groups are limited to 64 devices if acknowledged messaging is used.

A broadcast address identifies all devices within a subnet or domain.

Commissioning the Network

Pressing the service pin, switch on the MicroTech III LONWORKS Communication Module, generates a service pin message, which contains the Neuron ID and the program code identification of the node. A service pin message is a network message that is generated by a node and broadcast on the network. It can be used to commission the LONWORKS network.

A network configuration tool maps device Neuron IDs to the domain/subnet/node logical addressing scheme when it creates the network image, the logical network addresses and connection information for all devices (nodes) on the network.

Configuring the Unit Controller

The MicroTech III 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 parameters set at the factory. Default values may be changed with the unit's keypad or via the network. See the MicroTech III Chiller Unit Controller Operation Manual.

Typical Application: Minimum Integration

When you have integrated the unit into your network, you can monitor and control unit operation from your workstation. This section describes the basic information rquired to set up and display data for network integration.

Set up the Unit for Network Control

To control the MicroTech III Chiller Unit Controller over the network, follow the setup steps below.

1. Set the Main Menu_View/Set Unit_Status/Settings_Control Source= to Local (default).
2. Using the keypad/display, setup the communication module for the network. See the appropriate IM for instructions.
3. Verify with the chiller/control company technician that the chiller is operational on BAS.
4. Set the Main Menu_View/Set Unit_Status/Settings_Control Source= to Network.

Display Important Data Points

Table 3 provides a typical workstation display of MicroTech III Chiller Unit Controller attributes with significant data points (page number of detailed description in parenthesis). Each data point is tagged with a number that identifies it in the Protocol Point Summary Tables (refer to Tables 4-8). These particular data points are indicated with boldface type.

Table 3. Significant Data Points

No	Configuration	No	Temperatures	No	Setpoints	No	Alarms
1	Chiller Status (48)	5	Evaporator Entering Fluid Temperature (64)	9	Cool Setpoint - Network (62)	11	Warning Alarm Code (89)
2	Chiller Mode Setpoint - Network (46)	6	Evaporator Leaving Fluid Temperature (65)	10	Capacity Limit Setpoint - Network (41)	12	Problem Alarm Code (90)
3	Actual Capacity (38)					13	Fault Alarm Code(90)
4	Chiller Enable Setpoint (43)					14	Clear Alarm - Network (50)

You can display any number of additional data points based on job requirements or individual preference. See Protocol Point Summary - LONWORKS on page 31 for lists of all LONWORKS Variables available to the network. See Protocol Point Summary – BACnet on page 16 for list of all BACnet Objects available to the network. For a more detailed description of all available data points, see the Detailed Protocol Point Information section on page 37.

Alarms

Alarms in a MicroTech III Chiller Unit Controller are divided into three classes: Faults, Problems, and Warnings.

- Fault Alarms have the highest priority.
- Problem Alarms have medium priority.
- Warning Alarms have the lowest priority.

Notification

Refer to the Alarms section (on page 80) for details on alarm monitoring and notification.

Clearing

BACnet

Alarms within MicroTech III Chiller Unit Controllers can be cleared via BACnet by setting the ClearAlarms variable to a value of 1. After the alarms are cleared, this variable will return to Normal (0).

LONWORKS

Using nviClearAlarm can clear alarms within MicroTech III Chiller Unit Controllers. To clear alarms, set the state property of nviClearAlarm to 1. The value property of nviClearAlarm is not used.

Unit Controller Sequence of Operation

The sequence of operation for a MicroTech III Chiller Unit Controller depends on the control type. Refer to the MicroTech III Chiller Unit Controller Operation Manual for sequence of operation details, including keypad operation.

Protocol Point Summary – BACnet

Table 4 contains the complete list of BACnet properties available from the MicroTech III Chiller Unit Controller. The data points in boldface represent the minimum integration properties (as identifed previously in Table 3.) Table 5 lists the available chiller alarm objects.

Table 4. Comphrensive BACnet Data Point List

Network Control Property	**Page**	**R = Read W = Write C=Commandable[2]**	**Object Type**	**Object Instance**	**Description**
Application Version	39	R	Device	*	Application version software running in the chiller.
Chiller Location	45	W	Device	*	Defines where the chiller is physically located. By default, this is blank.
Chiller Model	47	R	Device	*	This defines the model of the chiller.
Evaporator Entering Fluid Temperature[1]	64	R	AI	1	-40°–230°F
Evaporator Leaving Fluid Temperature[1]	65	R	AI	2	-40°–230°F
Outdoor Air Temperature	74	R	AI	5, 149	-40°–230°F Two analog inputs exist for the Outdoor Air Temperature 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. Therefore, either Analog Input can be used to display the current outdoor air temperature since they will be the same value. See the tables in the Alarm Notification on page 81 for more information on which objects generate which alarms for Intrinsic Alarming.
Chiller Current	42	R	AI	6	0–10,000 amps (less for some models)
Active Capacity Limit (Output)	40	R	AV	1	0–100%
Actual Capacity[1]	38	R	AV	2	0–100%
Capacity Limit Setpoint - Network[1]	41	C	AV	3	0 to 100%; Default=100%
Cool Setpoint - Network[1]	62	C	AV	4	24.98 – 60.08°F; Default=43.88°F (6.6°C)
Active Setpoint	38	R	AV	5	15.08°–149.9°F (-9.4°C to 65.5°C)
Ice Setpoint - Network	71	C	AV	7	15.08°-38.12°F (-9.4°-3.4°C) Default = 24.98°F (-3.9°C)
Chiller Enable Output	43	R	BI	7	0=Disable, 1=Enable
Chiller Enable Setpoint[1]	43	C	BV	2	0=Disable, 1=Enable
Chiller Local/Network	44	R	BI	3	0=Network, 1=Local
Chiller On/Off	47	R	BI	4	0=Chiller Off, 1=Chiller On
Run Enabled	76	R	BI	5	0=OFF, 1=Run Allowed
Chiller Capacity Limited	41	R	BI	6	0=Not Limited, 1=Limited
Units	78	W	MSV	4	1=Metric, 2= Engish (Default). The power must be cycled on the unit controller for this change to take effect.
Chiller Status[1]	48	R	MSV	1	1=Off, 2=Start, 3=Run, 4=Preshutdown, 5=Service
Chiller Mode Output	46	R	MSV	2	1=Ice, 2=Cool, 3=Heat, 4=Cool/Heat Recovery, 5=Defrost
Chiller Mode Setpoint – Network[1]	46	C	MSV	3	1=Ice, 2=Cool, 3=Heat, 4=Cool/Heat Recovery, Default=Cool. The Pathfinder Chiller only supports Ice and Cool modes. If any other mode is written, the chiller will be set to Cool mode.

Network Control Property	Page	R = Read W = Write C=Commandable[2]	Object Type	Object Instance	Description
Compressor Discharge Refrigerant Temperature	54	R			-40°– 249.8°F, -40°– 121°C
Circuit #1 Compressor #1			AI	63	
Circuit #2 Compressor #1			AI	66	
Circuit #3 Compressor #1			AI	69	
Circuit #4 Compressor #1			AI	72	
Condenser Refrigerant Pressure	60	R			0-410.019 PSI, (700PSI for R410A)
Condenser #1			AI	99, 157, 161	0-4827 kPa (4826 kPa for R410A)
Condenser #2			AI	100, 158, 162	
Condenser #3			AI	101, 159, 163	
Condenser #4			AI	102, 160, 164	
Condenser Saturated Refrigerant Temperature	61	R			-14.98-185°F (-26.1-85°C)
Condenser #1			AV	44	
Condenser #2			AV	45	
Condenser #3			AV	46	
Condenser #4			AV	47	
Compressor Suction Refrigerant Temperature	56	R			-40°–230°F
Circuit #1 Compressor #1			AI	105	
Circuit #2 Compressor #1			AI	108	
Circuit #3 Compressor #1			AI	111	
Circuit #4 Compressor #1			AI	114	-40°–230°F
Evaporator Refrigerant Pressure	67	R			-349.974–349.974 psi
Evaporator #1			AI	141, 153, 169, 173	-2413 kPa – 2413 kPa Multiple analog inputs exist for the Evaporator Refrigerant Pressure 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 the Evaporator Refrigerant Pressure, use any one of the four analog inputs on the circuit. See the tables in the Alarm Notification on page 81 for more information on which objects generate which alarms for Intrinsic Alarming.
Evaporator #2			AI	142, 154, 170, 174	
Evaporator #3			AI	143, 155, 171, 175	
Evaporator #4			AI	144, 156, 172, 176	
Evaporator Saturated Refrigerant Temperature	69	R			-14.98-185°F (-26.1-85°C)
Evaporator #1			AV	68	
Evaporator #2			AV	69	
Evaporator #3			AV	70	
Evaporator #4			AV	71	

Network Control Property	Page	R = Read W = Write C=Commandable[2]	Object Type	Object Instance	Description
Compressor Run Hours	56	W			0 –999,999
Circuit #1 Compressor #1			AV	74	
Circuit #1 Compressor #2			AV	75	
Circuit #1 Compressor #3			AV	76	
Circuit #2 Compressor #1			AV	77	
Circuit #2 Compressor #2			AV	78	
Circuit #2 Compressor #3			AV	79	
Circuit #3 Compressor #1			AV	80	
Circuit #4 Compressor #1			AV	83	
Compressor Starts	57	W			0 –65,535
Circuit #1 Compressor #1			AV	92	
Circuit #1 Compressor #2			AV	93	
Circuit #1 Compressor #3			AV	94	
Circuit #2 Compressor #1			AV	95	
Circuit #2 Compressor #2			AV	96	
Circuit #2 Compressor #3			AV	97	
Circuit #3 Compressor #1			AV	98	
Circuit #4 Compressor #1			AV	101	
Evaporator Flow Switch Status	64	R	BI	2	0=No Flow, 1=Flow
Evaporator Pump Status	66	R			0=Pump Off Request, 1=Pump On Request
Pump #1			BI	8	
Pump #2			BI	9	
Evaporator Pump Run Hours	66	W			0 –999,999
Pump #1			AV	112	
Pump #2			AV	113	
Oil Feed Pressure	73	R			These objects are used for Intrinsic Alarming.
Circuit #1 Compressor #1			AI	165	
Circuit #2 Compressor #1			AI	166	
Circuit #3 Compressor #1			AI	167	
Circuit #4 Compressor #1			AI	168	
Compressor Percent RLA	54	R			
Circuit #1 Compressor #1			AV	8	
Circuit #2 Compressor #1			AV	11	
Circuit #3 Compressor #1			AV	14	
Compressor Current	52	R			Indicates the average current of the compressor motor. These objects are used for Intrinsic Alarming. 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 four analog inputs on the circuit. See the tables in the Alarm Notification on page 81 for more information on which objects generate which alarms for Intrinsic Alarming.
Circuit #1 Compressor #1			AI	9, 181, 184	
Circuit #2 Compressor #1			AI	12, 182, 185	
Circuit #3 Compressor #1			AI	15, 183, 186	
Compressor Voltage	59	R			
Circuit #1 Compressor #1			AI	27	
Circuit #2 Compressor #1			AI	30	
Circuit #3 Compressor #1			AI	33	
Compressor Power	55	R			
Circuit #1 Compressor #1			AI	45	
Circuit #2 Compressor #1			AI	48	

Network Control Property	Page	R = Read W = Write C=Commandable[2]	Object Type	Object Instance	Description
Circuit #3 Compressor #1			AI	51	
VFD Temp	78	R			Temperature of the compressor VFD heatsink. These objects are used for Intrinsic Alarming.
Circuit #1 Compressor #1			AI	178	
Circuit #2 Compressor #1			AI	179	
Circuit #3 Compressor #1			AI	180	

[1]Denotes data points for typical minimum integration.
[2]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 MicroTech III Chiller Unit Controller is communicating via BACnet MS/TP or BACnet IP. However, LonWorks and Modbus protocols always write at Priority 8.

Table 5. Chiller Alarm Objects

Network Control Property	Page	R = Read W = Write C=Commandable[1]	Object Type	Object Instance	Description
Alarm Digital Output	39	R	BI	10	0=No Alarm, 1=Alarm
Clear Alarm - Network[3]	50	C	BV	8	0=Normal, 1=Clear Alarm
Warning Alarm Code[3]	89	R	AV	903	0=No Alarms 513=Evaporator Entering Water Temperature Sensor Warning 2049=Bad setpoint override input 2305=Bad demand limit input 2817=Unit power restore 3105=Circuit 1 failed pumpdown 3137=Circuit 2 Failed pumpdown 3169=Circuit 3 failed pumpdown 3201=Circuit 4 failed pumpdown 3329=External Event 3585=Bad Current Limit Input 3841=Option Controller Communication Failed
Problems Alarm Code[3]	90	R	AV	904	0=No Alarms, 16418=RESTART DELAYED - Power Loss While Running Circuit #1 16450=RESTART DELAYED - Power Loss While Running Circuit #2 16482=RESTART DELAYED - Power Loss While Running Circuit #3 16514=RESTART DELAYED - Power Loss While Running Circuit #4 16642=START INHIBITED - Ambient Temperature Low 16898=INHIBIT LOAD–Condenser Pressure High 17186=INHIBIT LOAD–Condenser Pressure High Circuit #1 17218=INHIBIT LOAD–Condenser Pressure High Circuit #2 17250=INHIBIT LOAD–Condenser Pressure High Circuit #3 17282=INHIBIT LOAD–Condenser Pressure High Circuit #4 17698=UNLOAD - Condenser Pressure High Circuit #1 17730=UNLOAD – Condenser Pressure High Circuit #2 17762=UNLOAD – Condenser Pressure High Circuit #3 17794=UNLOAD – Condenser Pressure High Circuit #4 19490=INHIBIT LOAD - Evaporator Pressure Low Circuit #1 19522=INHIBIT LOAD - Evaporator Pressure Low Circuit #2 19554=INHIBIT LOAD - Evaporator Pressure Low Circuit #3 19586=INHIBIT LOAD - Evaporator Pressure Low Circuit #4 20002=UNLOAD - Evaporator Pressure Low Circuit #1 20034=UNLOAD - Evaporator Pressure Low Circuit #2 20066=UNLOAD - Evaporator Pressure Low Circuit #3 20098=UNLOAD - Evaporator Pressure Low Circuit #4 20262=UNLOAD-Comp Motor Current High Circuit #1, Comp #1 20294=UNLOAD-Comp Motor Current High Circuit #2, Comp #1

Network Control Property	Page	R = Read W = Write C=Commandable[1]	Object Type	Object Instance	Description
					20326=UNLOAD-Comp Motor Current High Circuit #3, Comp #1 20738=PUMP #2 START ATTEMPTED - Evaporator Pump #1 Failure 20994=PUMP #1 START ATTEMPTED - Evaporator Pump #2 Failure 21542=INHIBIT LOAD-Comp Motor Current High Circuit #1, Comp #1 21574=INHIBIT LOAD-Comp Motor Current High Circuit #2, Comp #1 21606= INHIBIT LOAD-Comp Motor Current High Circuit #3, Comp #1
Fault Alarm Code[3]	90	R	AV	905	0=No Alarms 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 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 36387=CIRCUIT SHUTDOWN – Condensor Pressure Sensor Circuit #1 Fault 36391=COMP SHUTDOWN-Condenser Pressure Sensor Fault Circuit #1, Comp #1 36419=CIRCUIT SHUTDOWN – Condensor 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 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

Network Control Property	Page	R = Read W = Write C=Commandable[1]	Object Type	Object Instance	Description
					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 38403=UNIT SHUTDOWN-Evaporator Water Flow Loss, 38659=UNIT SHUTDOWN–Evaporator Leaving Water Temp 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 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 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,

Network Control Property	Page	R = Read W = Write C=Commandable[1]	Object Type	Object Instance	Description
					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=Controller board offline Circuit #1 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 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

Network Control Property	Page	R = Read W = Write C=Commandable[1]	Object Type	Object Instance	Description
					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 51755 = 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
Warning Alarm Index	91	R	AV	902	0=No Alarms 2=Evaporator Entering Water Temperature Sensor Warning 8=Bad setpoint override input 9=Bad demand limit input 11=Unit power restore 12=Circuit failed pumpdown 13=External Event 14=Bad Current Limit Input 15=Option Controller Communication Failed

Problems Alarm Index	91	R	AV	900	0=No Alarms
					64=RESTART DELAYED-Power Loss While Running Circuit #n
					65=START INHIBITED - Ambient Temperature Low
					67=INHIBIT LOAD – Condenser Pressure High Circuit #n
					69=UNLOAD – Condenser Pressure High Circuit #n
					76=INHIBIT LOAD - Evaporator Pressure Low Circuit #n
					78=UNLOAD - Evaporator Pressure Low Circuit #n
					79=UNLOAD - Comp Motor Current High Circuit #n, Comp #n
					81=PUMP #2 START ATTEMPTED - Evaporator Pump #1 Failure
					82=PUMP #1 START ATTEMPTED - Evaporator Pump #2 Failure
					84= INHIBIT LOAD-Comp Motor Current High Circuit #n, Comp #n

Fault Alarm Index	91	R	AV	901	0=No Alarms
					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
					135=COMP SHUTDOWN–Motor Temp High Circuit #n
					136=COMP SHUTDOWN–Motor Temp Sensor Fault #n
					142=COMP or CIRCUIT SHUTDOWN-Condenser Pressure Sensor Fault #n
					145=COMP or CIRCUIT SHUTDOWN-Condenser Pressure High #n,

Network Control Property	Page	R = Read W = Write C=Commandable[1]	Object Type	Object Instance	Description

					147=COMP SHUTDOWN-Discharge Temp Sensor Fault #n
					148=COMP SHUTDOWN-Discharge Temp High #n
					150=UNIT SHUTDOWN-Evaporator Water Flow Loss
					151=UNIT SHUTDOWN–Evaporator Leaving Water Temp Low (Freeze)
					153=COMP or CIRCUIT SHUTDOWN-Evaporator Pressure Low #n,
					155=COMP or CIRCUIT SHUTDOWN-Evaporator Pressure Sensor Fault #n
					161=COMP 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 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 SHUTDOWN-Suction Temp Sensor Fault #n
					187=COMP SHUTDOWN–Mechanical Low Pressure Trip #n
					188=Controller board offline Circuit #n
					189=COMP SHUTDOWN –No Pressure Change After Start
					190=COMP SHUTDOWN–No Pressure at Startup
					191=CIRCUIT SHUTDOWN–Evaporator Freeze Protection
					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=UNIT STOP – External Alarm

Notification Class - Faults	87	R	NC	1	All faults report to this notification class.
Notification Class - Problems	88	R	NC	2	All problems report to this notification class.
Notification Class - Warnings	89	R	NC	3	All warnings report to this notification class.
Compressor Controller Communication Failed	51	C[2]			0=NoAlarm, 1=InAlarm. This object is present only for Intrinsic Alarming.
Circuit #1			BV	9	
Circuit #2			BV	10	
Circuit #3			BV	11	
Circuit #4			BV	12	
EXV Controller Communication Failed-Circuit #1	70	C[2]	BV	13	0=NoAlarm, 1=InAlarm. This object is present only for Intrinsic Alarming.
EXV Controller Communication Failed-Circuit #2	70	C[2]	BV	14	0=NoAlarm, 1=InAlarm. This object is present only for Intrinsic Alarming.
EXV Controller Communication Failed-Circuit #3	70	C[2]	BV	15	0=NoAlarm, 1=InAlarm. This object is present only for Intrinsic Alarming.
EXV Controller Communication Failed-Circuit #4	70	C[2]	BV	16	0=NoAlarm, 1=InAlarm. This object is present only for Intrinsic Alarming.

Network Control Property	Page	R = Read W = Write C=Commandable[1]	Object Type	Object Instance	Description
Alarm/Limit Controller Communication Failed	92	C[2]	BV	17	0=NoAlarm, 1=InAlarm. This object is present only for Intrinsic Alarming.
Fan Controller Communication Failed-Circuit #1 & Circuit #2	71	C[2]	BV	18	0=NoAlarm, 1=InAlarm. This object is present only for Intrinsic Alarming.
Fan Controller Communication Failed-Circuit #3	71	C[2]	BV	19	0=NoAlarm, 1=InAlarm. This object is present only for Intrinsic Alarming.
Fan Controller Communication Failed-Circuit #4	71	C[2]	BV	20	0=NoAlarm, 1=InAlarm. This object is present only for Intrinsic Alarming.
Fan Controller Communication Failed-Circuit #3 & Circuit #4	71	C[2]	BV	21	0=NoAlarm, 1=InAlarm. This object is present only for Intrinsic Alarming.
Evap LWT 1	65	R	AI	151	0=NoAlarm, 1=InAlarm. This object is present only for Intrinsic Alarming.
Evap LWT 2	65	R	AI	152	0=NoAlarm, 1=InAlarm. This object is present only for Intrinsic Alarming.
Evaporator Entering Water Temperature Sensor Fault	124	C[2]	BV	917	0=No Alarm, 1=In Alarm.

Network Control Property	Page	R = Read W = Write C=Commandable[1]	Object Type	Object Instance	Description
Evaporator Entering Water Temperature Sensor Warning	95	C[2]	BV	501	0=No Alarm, 1=In Alarm.
Bad Setpoint Override Input Warning	93	C[2]	BV	512	0=No Alarm, 1=In Alarm. This object is used for Intrinsic Alarming.
Bad Demand Limit Input Warning	93	C[2]	BV	513	0=No Alarm, 1=In Alarm. This object is used for Intrinsic Alarming.
UNIT Power Restore Warning[4]	131	C[2]	BV	515	0=No Alarm, 1=In Alarm. This object is used for Intrinsic Alarming.
Circuit #n Failed Pumpdown Warning	94	C[2]			0=No Alarm, 1=In Alarm. These objects are used for Intrinsic Alarming.
Circuit #1			BV	516	
Circuit #2			BV	517	
Circuit #3			BV	518	
Circuit #4			BV	519	
Power Loss While Running Circuit #n Problem	129	C[2]			0=No Alarm, 1=In Alarm. These objects are used for Intrinsic Alarming.
Circuit #1			BV	529	
Circuit #2			BV	530	
Circuit #3			BV	531	
Circuit #4			BV	532	
Ambient Temperature Low Problem	92	C[2]	BV	533	0=No Alarm, 1=In Alarm
INHIBIT LOAD – Condenser Pressure High Circuit #n Problem[4]	127	C[2]			0=No Alarm, 1=In Alarm
Circuit #1			BV	535	
Circuit #2			BV	536	
Circuit #3			BV	537	
Circuit #4			BV	538	
UNLOAD – Condenser Pressure High #n Prob[4]	135	C[2]			0=No Alarm, 1=In Alarm
Circuit #1			BV	540	
Circuit #2			BV	541	
Circuit #3			BV	542	
Circuit #4			BV	543	

Network Control Property	Page	R = Read W = Write C=Commandable[1]	Object Type	Object Instance	Description
INHIBIT LOAD - Evap Pressure Low #n Prob[4]	128	C[2]			0=No Alarm, 1=In Alarm
Circuit #1			BV	556	
Circuit #2			BV	557	
Circuit #3			BV	558	
Circuit #4			BV	559	
UNLOAD - Evap Pressure Low #n Problem[4]	136	C[2]			0=No Alarm, 1=In Alarm
Circuit #1			BV	561	
Circuit #2			BV	562	
Circuit #3			BV	563	
Circuit #4			BV	564	
UNLOAD - Compressor Motor Current High #n Problem[4]	134	C[2]			0=No Alarm, 1=In Alarm
Circuit #1 Compressor #1			BV	565	
Circuit #2 Compressor #1			BV	567	
Circuit #3 Compressor #1			BV	569	
PUMP #2 START ATTEMPTED - Evaporator Pump #1 Failure	125	C[2]	BV	575	0=No Alarm, 1=In Alarm
PUMP #1 START ATTEMPTED - Evaporator Pump #2 Failure	126	C[2]	BV	576	0=No Alarm, 1=In Alarm
INHIBIT LOAD - Compressor Motor Current High #n Problem[4]	126	C[2]			0=No Alarm, 1=In Alarm
Circuit #1 Compressor #1			BV	578	
Circuit #2 Compressor #1			BV	580	
Circuit #3 Compressor #1			BV	582	
COMPRESSOR SHUTDOWN – Low Pressure Ratio #n Fault	107	C[2]			0=No Alarm, 1=In Alarm. These objects are used for Intrinsic Alarming.
Circuit #1 Compressor #1			BV	599	
Circuit #2 Compressor #1			BV	601	
Circuit #3 Compressor #1			BV	603	
Circuit #4 Compressor #1			BV	604	
COMP SHUTDOWN - Outside Air Temperature Sensor Fault	119	C[2]	BV	605	0=No Alarm, 1=In Alarm
COMP SHUTDOWN - Current Overload Trip #n Fault	101	C[2]			0=No Alarm, 1=In Alarm
Circuit #1			BV	606	
Circuit #2			BV	608	
Circuit #3			BV	610	
COMPRESSOR SHUTDOWN – Motor Protector Trip Circuit #n Compressor #n	110	C[2]			0=No Alarm, 1=In Alarm
Circuit #1 Compressor #1			BV	625	
Circuit #2 Compressor #1			BV	627	
COMP SHUTDOWN – Motor Temperature High Circuit #n Compressor #n Fault	114	C[2]			0=No Alarm, 1=In Alarm. These objects are used for Intrinsic Alarming.
Circuit #1 Compressor #1			BV	637	
Circuit #2 Compressor #1			BV	639	
Circuit #3 Compressor #1			BV	641	
Circuit #4 Compressor #1			BV	642	
COMP SHUTDOWN - Condenser Pressure Sensor Circuit #n Compressor #n Fault	100	C[2]			0=No Alarm, 1=In Alarm
Circuit #1 Compressor #1			BV	668	
Circuit #2 Compressor #1			BV	670	
Circuit #3 Compressor #1			BV	672	
Circuit #4 Compressor #1			BV	673	

Network Control Property	Page	R = Read W = Write C=Commandable[1]	Object Type	Object Instance	Description
CIRCUIT SHUTDOWN – Low Evaporator Pressure Trip Circuit #n Fault	111	C[2]			0=No Alarm, 1=In Alarm
Circuit #1			BV	704	
Circuit #2			BV	706	
CIRCUIT SHUTDOWN – Condenser Pressure High Trip Circuit #n Fault	111	C[2]			0=No Alarm, 1=In Alarm
Circuit #1			BV	676	
Circuit #2			BV	678	
CIRCUIT SHUTDOWN – Evaporator Pressure Sensor Circuit #n Fault	112	C[2]			0=No Alarm, 1=In Alarm
Circuit #1			BV	711	
Circuit #2			BV	713	
CIRCUIT SHUTDOWN – Condensor Pressure Sensor Circuit #n Fault	113	C[2]			0=No Alarm, 1=In Alarm
Circuit #1			BV	668	
Circuit #2			BV	670	
COMP SHUTDOWN - Condenser Pressure High Circuit #n Compressor #n Fault	99	C[2]			0=No Alarm, 1=In Alarm
Circuit #1 Compressor #1			BV	676	
Circuit #2 Compressor #1			BV	678	
Circuit #3 Compressor #1			BV	680	
Circuit #4 Compressor #1			BV	681	
COMP SHUTDOWN - Discharge Temperature Sensor Circuit #n Compressor #n Fault	101	C[2]			0=No Alarm, 1=In Alarm
Circuit #1 Compressor #1			BV	688	
Circuit #2 Compressor #1			BV	690	
Circuit #3 Compressor #1			BV	692	
Circuit #4 Compressor #1			BV	693	
COMP SHUTDOWN - Discharge Temp High Circuit #n Compressor #n Fault	103	C[2]			0=No Alarm, 1=In Alarm
Circuit #1 Compressor #1			BV	694	
Circuit #2 Compressor #1			BV	696	
Circuit #3 Compressor #1			BV	698	
Circuit #4 Compressor #1			BV	699	
UNIT SHUTDOWN - Evaporator Water Flow Loss Fault	132	C[2]	BV	701	0=No Alarm, 1=In Alarm. This object is used for Intrinsic Alarming.
COMP SHUTDOWN - Evaporator Leaving Water Temperature Low (Freeze) Fault	104	C[2]	BV	702	0=No Alarm, 1=In Alarm. This object is used for Intrinsic Alarming.
COMP SHUTDOWN - Evaporator Pressure Low Circuit #n Compressor #n Fault	105	C[2]			0=No Alarm, 1=In Alarm
Circuit #1 Compressor #1			BV	704	
Circuit #2 Compressor #1			BV	706	
Circuit #3 Compressor #1			BV	708	
Circuit #4 Compressor #1			BV	709	

Network Control Property	Page	R = Read W = Write C=Commandable[1]	Object Type	Object Instance	Description
COMP SHUTDOWN - Evaporator Pressure Sensor Circuit #n Compressor #n Fault	105	C[2]			0=No Alarm, 1=In Alarm
Circuit #1 Compressor #1			BV	711	
Circuit #2 Compressor #1			BV	713	
Circuit #3 Compressor #1			BV	715	
Circuit #4 Compressor #1			BV	716	
COMP LOCKOUT - Number of Allowed Re-Starts Exceeded Circuit #n Compressor #n Fault	96	C[2]			0=No Alarm, 1=In Alarm. These objects are used for Intrinsic Alarming.
Circuit #1 Compressor #1			BV	742	
Circuit #2 Compressor #1			BV	744	
Circuit #3 Compressor #1			BV	746	
Circuit #4 Compressor #1			BV	747	
UNIT SHUTDOWN - Evaporator Leaving Water Temperature Sensor Fault	132	C[2]	BV	748	0=No Alarm, 1=In Alarm
Evaporator Leaving Water Temperature 1 Sensor Fault	124	C[2]	BV	749	0=No Alarm, 1=In Alarm
Evaporator Leaving Water Temperature 2 Sensor Fault	125	C[2]	BV	750	0=No Alarm, 1=In Alarm
CIRCUIT SHUTDOWN- Evaporator 1 Freeze Protection Fault	95	C[2]	BV	751	0=No Alarm, 1=In Alarm
CIRCUIT SHUTDOWN- Evaporator 2 Freeze Protection Fault	96	C[2]	BV	752	0=No Alarm, 1=In Alarm
COMP SHUTDOWN - Mechanical High Press Trip Circuit #n Compressor #n Fault	109	C[2]			0=No Alarm, 1=In Alarm. These objects are used for Intrinsic Alarming.
Circuit #1 Compressor #1			BV	760	
Circuit #2 Compressor #1			BV	762	
Circuit #3 Compressor #1			BV	764	
Circuit #4 Compressor #1			BV	765	
COMP SHUTDOWN – Oil Delta Pressure High Circuit #n Compressor #n Fault	117	C[2]			0=No Alarm, 1=In Alarm. These objects are used for Intrinsic Alarming.
Circuit #1 Compressor #1			BV	796	
Circuit #2 Compressor #1			BV	798	
Circuit #3 Compressor #1			BV	800	
Circuit #4 Compressor #1			BV	801	
COMP SHUTDOWN - Oil Feed Pressure Sensor Circuit #n Compressor #n Fault	118	C[2]			0=No Alarm, 1=In Alarm
Circuit #1 Compressor #1			BV	802	
Circuit #2 Compressor #1			BV	804	
Circuit #3 Compressor #1			BV	806	
Circuit #4 Compressor #1			BV	807	
SHUTDOWN – Phase Voltage Protection Fault	130	C[2]			0=No Alarm, 1=In Alarm. These objects are used for Intrinsic Alarming.
Unit			BV	820	
Circuit #1			BV	926	
Circuit #2			BV	927	
Circuit #3			BV	928	
Circuit #4			BV	929	
COMPRESSOR SHUTDOWN – Starter Fault Compressor #n Fault	121	C[2]			0=No Alarm, 1=In Alarm. These objects are used for Intrinsic Alarming.
Circuit #1 Compressor #1			BV	821	
Circuit #2 Compressor #1			BV	823	
Circuit #3 Compressor #1			BV	825	
Circuit #4 Compressor #1			BV	826	

Network Control Property	Page	R = Read W = Write C=Commandable[1]	Object Type	Object Instance	Description
COMP SHUTDOWN - Suction Temp Sensor Circuit #n Compressor #n Fault	122	C[2]			0=No Alarm, 1=In Alarm
Circuit #1 Compressor #1			BV	857	
Circuit #2 Compressor #1			BV	859	
Circuit #3 Compressor #1			BV	861	
Circuit #4 Compressor #1			BV	862	
Controller Board #n Offline Fault	123	C[2]			0=No Alarm, 1=In Alarm
Unit			BV	925	
Circuit #1			BV	882	
Circuit #2			BV	883	
Circuit #3			BV	884	
Circuit #4			BV	885	
COMP SHUTDOWN – Mechanical Low Pressure Trip Circuit #n Compressor #n	108	C[2]			0=No Alarm, 1=In Alarm. These objects are used for Intrinsic Alarming.
Circuit #1 Compressor #1			BV	876	
Circuit #2 Compressor #1			BV	878	
Circuit #3 Compressor #1			BV	880	
Circuit #4 Compressor #1			BV	881	
COMP SHUTDOWN – Motor Temp Sensor Circuit #n Compressor #n	110	C[2]			0=No Alarm, 1=In Alarm. These objects are used for Intrinsic Alarming.
Circuit #1 Compressor #1			BV	899	
Circuit #2 Compressor #1			BV	901	
Circuit #3 Compressor #1			BV	903	
Circuit #4 Compressor #1			BV	904	
COMP SHUTDOWN – No Pressure Change After Start Circuit #n	115	C[2]			0=No Alarm, 1=In Alarm. These objects are used for Intrinsic Alarming.
Circuit #1			BV	905	
Circuit #2			BV	906	
Circuit #3			BV	907	
Circuit #4			BV	908	
COMP SHUTDOWN – No Pressure at Startup Circuit #n	116	C[2]			0=No Alarm, 1=In Alarm. These objects are used for Intrinsic Alarming.
Circuit #1			BV	911	
Circuit #2			BV	912	
Circuit #3			BV	913	
Circuit #4			BV	914	
Bad Current Limit Input Warning	93	C[2]	BV	918	0=No Alarm, 1=In Alarm. This object is used for Intrinsic Alarming.
Option Controller Communication Failed Warning	129	C[2]	BV	919	0=No Alarm, 1=In Alarm
UNIT STOP – Emergency Stop Alarm	133	C[2]	BV	921	0=No Alarm, 1=In Alarm. This object is used for Intrinsic Alarming.
UNIT STOP – Evaporator Water Temperatures Inverted	133	C[2]	BV	922	0=No Alarm, 1=In Alarm. This object is used for Intrinsic Alarming.
UNIT STOP – External Alarm	133	C[2]	BV	923	0=No Alarm, 1=In Alarm. This object is used for Intrinsic Alarming.
External Event	125	C[2]	BV	924	0=No Alarm, 1=In Alarm. This object is used for Intrinsic Alarming.

Network Control Property	Page	R = Read W = Write C=Commandable[1]	Object Type	Object Instance	Description
COMP SHUTDOWN – Slide Position Sensor #n Fault	120	C[2]			0=No Alarm, 1=In Alarm. These objects are used for Intrinsic Alarming.
Circuit #1 Compressor #1			BV	930	
Circuit #2 Compressor #1			BV	932	
Circuit #3 Compressor #1			BV	934	
Circuit #4 Compressor #1			BV	935	
COMP SHUTDOWN - COMPRESSOR VFD Fault Circuit #n Comp #n	98	C[2]			0=No Alarm, 1=In Alarm. These objects are used for Intrinsic Alarming.
Circuit #1 Compressor #1			BV	886	
Circuit #2 Compressor #1			BV	888	
Circuit #3 Compressor #1			BV	890	
COMP SHUTDOWN - COMPRESSOR VFD Over Heat #n Fault	99	C[2]			0=No Alarm, 1=In Alarm
Circuit #1 Compressor #1			BV	942	
Circuit #2 Compressor #1			BV	944	
Circuit #3 Compressor #1			BV	946	
COMP SHUTDOWN - COM ERROR With COMPRESSOR VFD Circuit #n Comp #n	97	C[2]			0=No Alarm, 1=In Alarm. These objects are used for Intrinsic Alarming.
Circuit #1 Compressor #1			BV	948	
Circuit #2 Compressor #1			BV	950	
Circuit #3 Compressor #1			BV	952	
COMP SHUTDOWN – Low Discharge Superheat Circuit #n Comp #n	106	C[2]			0=No Alarm, 1=In Alarm. These objects are used for Intrinsic Alarming.
Circuit #1 Compressor #1			BV	961	
Circuit #2 Compressor #1			BV	963	
Circuit #3 Compressor #1			BV	965	
UNIT STOP - PVM GFP Fault	137	C[2]	BV	967	0=No Alarm, 1=In Alarm. These objects are used for Intrinsic Alarming.
CIRCUIT SHUTDOWN- PVM GFP Circuit #n Fault	137	C[2]			0=No Alarm, 1=In Alarm. These objects are used for Intrinsic Alarming.
Circuit #1			BV	968	
Circuit #2			BV	969	

[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 MicroTech III 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, McQuay 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.**

[3]Denotes alarms required for typical minimum integration.

[4] This object only applies to AWS application software version 2507500204 or earlier. This point will always read 0 in subsequent versions of the AWS application.

Protocol Point Summary - LONWORKS

Table 6 contains the complete list of LONWORKS variables available from the MicroTech III Chiller Unit Controller. Table 7 lists the available LONWORKS Network Input Variables and Table 8 defines the LONWORKS Network Configuration Parameters.

Table 6. LONWORKS Comphrensive Variables List

Network Control Property	Page	Variable Name	SNVT Index	Description
Active Setpoint	38	nvoActiveSetpt	105	-9.4°–65.5°C (15.08-149.9°F)
Actual Capacity[1]	38	nvoActCapacity	81	0–100%
Alarm Digital Output	39	nvoChillerstat	127	0=No Alarm, 1=In Alarm
Active Capacity Limit (Output)	40	nvoCapacityLim	81	0–100%
Chiller Capacity Limited	41	nvoChillerstat	127	0=Not Limited, 1=Limited
Chiller Mode Output	46	nvoChillerstat	127	1=Heat, 3=Cool, 11=Ice, Other states are unused.
Chiller Local/Network	44	nvoChillerstat	127	0=Network, 1=Local
Chiller On/Off	47	nvoOnOff	95	0=Chiller Off, 1=Chiller On
Chiller Status[1]	48	nvoChillerStat	127	Chiller Run Mode (Chlr_run_mode): 0=CHLR_OFF 1= CHLR_START 2=CHLR_RUN 3=CHLR_PRESHUTDN 4=CHLR_SERVICE
Chiller Current	42	nvoCurrent	1	0-10,000 Amperes
Compressor Discharge Refrigerant Temperature	54	nvoCompDisTemp	105	-40°-121°C
Condenser Refrigerant Pressure	60	nvoCondRefPres	30	0-2827 kPa, (0-4826 kPa for R410A)
Condenser Saturated Refrigerant Temperature	61	nvoCondSatRefTmp	105	-40°-110°C
Compressor Run Hours	56	nvoCompHrs	8	0 –999,999
Compressor Starts	57	nvoCompStarts	8	0 –65,535
Compressor Suction Refrigerant Temperature	56	nvoSuctionTemp	105	-40°–110°C
Evaporator Entering Fluid Temperature[1]	64	nvoEntChWTemp	105	-40°–110°C
Evaporator Flow Switch Status	64	nvoChillerstat	127	CHW_flow: 0=No Flow, 1=Flow
Evaporator Leaving Fluid Temperature[1]	65	nvoLvgChWTemp	105	-40°–110°C
Evaporator Pump Run Hours	66	nvoEvapPumpHrs	8	0 –999,999
Evaporator Refrigerant Pressure	67	nvoEvapRefPress	30	-2413 – 2413 Kpa
Evaporator Saturated Refrigerant Temperature	69	nvoEvapSatRefTmp	105	-40°-110°C
Evaporator Pump Status	66	nvoChWPump	95	0= Pump Off Request, 1= Pump On Request
Outdoor Air Temperature	74	nvoOutdoorTemp	105	-40°–110°C
Run Enabled	76	nvoChillerStat	127	0=Off, 1=Run Allowed
Compressor Percent RLA	54	nvoCompPercRLA	81	
Compressor Current	52	nvoCurrent	139	
Compressor Voltage	59	nvoVoltage	138	
Compressor Power	55	nvoKiloWatts	28	
Current Alarm Descriptor	63	nvoAlarmDescr	36	
Warning Alarm Code[1]	89	nvoWarningAarm	127	0=No Alarms 513=Evaporator Entering Water Temp Sensor Warning 2049=Bad setpoint override input 2305=Bad demand limit input 2817=Unit power restore 3105=Circuit 1 failed pumpdown 3137=Circuit 2 Failed pumpdown 3169=Circuit 3 failed pumpdown 3201=Circuit 4 failed pumpdown 3329=External Event 3841=Option Controller Communication Failed

Network Control Property	Page	Variable Name	SNVT Index	Description
Problems Alarm Code[1]	90	nvoProblemAlarm	127	0=No Alarms, 16418=RESTART DELAYED - Power Loss While Running Circuit #1 16450=RESTART DELAYED - Power Loss While Running Circuit #2 16482=RESTART DELAYED - Power Loss While Running Circuit #3 16514=RESTART DELAYED - Power Loss While Running Circuit #4 16642=START INHIBITED - Ambient Temperature Low 16898=INHIBIT LOAD–Condenser Pressure High 17186=INHIBIT LOAD–Condenser Pressure High Circuit #1 17218=INHIBIT LOAD–Condenser Pressure High Circuit #2 17250=INHIBIT LOAD–Condenser Pressure High Circuit #3 17282=INHIBIT LOAD–Condenser Pressure High Circuit #4 17698=UNLOAD - Condenser Pressure High Circuit #1 17730=UNLOAD – Condenser Pressure High Circuit #2 17762=UNLOAD – Condenser Pressure High Circuit #3 17794=UNLOAD – Condenser Pressure High Circuit #4 19490=INHIBIT LOAD - Evaporator Pressure Low Circuit #1 19522=INHIBIT LOAD - Evaporator Pressure Low Circuit #2 19554=INHIBIT LOAD - Evaporator Pressure Low Circuit #3 19586=INHIBIT LOAD - Evaporator Pressure Low Circuit #4 20002=UNLOAD - Evaporator Pressure Low Circuit #1 20034=UNLOAD - Evaporator Pressure Low Circuit #2 20066=UNLOAD - Evaporator Pressure Low Circuit #3 20098=UNLOAD - Evaporator Pressure Low Circuit #4 20262=UNLOAD-Comp Motor Current High Circuit #1, Comp #1 20294=UNLOAD-Comp Motor Current High Circuit #2, Comp #1 20326=UNLOAD-Comp Motor Current High Circuit #3, Comp #1 20738=PUMP #2 START ATTEMPTED - Evaporator Pump #1 Failure 20994=PUMP #1 START ATTEMPTED - Evaporator Pump #2 Failure 21542=INHIBIT LOAD-Comp Motor Current High Circuit #1, Comp #1 21574=INHIBIT LOAD-Comp Motor Current High Circuit #2, Comp #1 21606= INHIBIT LOAD-Comp Motor Current High Circuit #3, Comp #1
Fault Alarm Code[1]	90	nvoFaultAlarm	127	0=No Alarms 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 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,

Network Control Property	Page	Variable Name	SNVT Index	Description
				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 36387=CIRCUIT SHUTDOWN – Condensor Pressure Sensor Circuit #1 Fault 36391=COMP SHUTDOWN-Condenser Pressure Sensor Fault Circuit #1, Comp #1 36419=CIRCUIT SHUTDOWN – Condensor 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 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 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 38403=UNIT SHUTDOWN-Evaporator Water Flow Loss, 38659=UNIT SHUTDOWN–Evaporator Leaving Water Temp 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

Network Control Property	Page	Variable Name	SNVT Index	Description
				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 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 Temperature Sensor Fault 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

Network Control Property	Page	Variable Name	SNVT Index	Description
				Circuit #4, Comp #1 48131=Unit Controller offline 48163=Controller board offline Circuit #1 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 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 51755 = 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

Network Control Property	Page	Variable Name	SNVT Index	Description
Status	77	nvoStatus	93	SNVT_obj_status
Chiller Enable Output	43	nvoChillerEnable	95	0=Disable, 1=Enable

[1]Denotes data points for typical minimum integration.

Table 7. LONWORKS Network Input Variables

Network Control Property	Page	Variable Name	SNVT Index	Description
Capacity Limit Setpoint - Network[1]	41	nviCapacityLim	81	0 to 100%; Default=100%
Chiller Enable Setpoint[1]	43	nviChillerEnable	95	0=Disable, 1=Enable
Chiller Mode Setpoint - Network[1]	46	nviMode	108	1=HVAC_HEAT, 3=HVAC_COOL (default), 11=HVAC_ICE; The Pathfinder Chiller only supports Ice and Cool modes. If any other mode is written, the chiller will be set to Cool mode.
Circuit Select	50	nviCircuitSelect	8	1=Circuit 1, 2=Circuit 2, 3=Circuit 3, 4=Circuit 4
Compressor Select	50	nviCompSelect	8	1=Compressor 1, 2= Compressor 2, 3= Compressor 3
Cool Setpoint[1]	62	nviCoolSetpt	105	-3.9– 15.6°C; Default=6.6°C
Current Date & Time	63	nviActTime	84	
Ice Setpoint	71	nviIceSpt	105	-9.4 to 3.4°C; Default=-3.9°C
Clear Alarm - Network[1]	50	nviClearAlarm	95	0= Inactive,1=Clear Alarm; Default=0
Pump Select	74	nviPumpSelect	95	0=Pump No. 1, 1=Pump No. 2; Default=0
Request	75	nviRequest	92	SNVT_obj_request

[1]Denotes data points for typical minimum integration.

Table 8. LONWORKS Network Configuration Parameters

Network Control Property	Page	Variable Name	SCPT_Reference	SCPT Index	Description	Default Value
Capacity Limit	40	nciCapacityLim	SCPTlimitChlrCap	81	0% to 100%.	100%
Chiller Enable	42	nciChillerEnable	SCPTpwrUpState	73	0=Request Chiller Off, 1=Request Chiller Auto (run)	0
Cool Setpoint	62	nciCoolSetpt	SCPTCoolSetpoint	75	-3.9 to 15.6°C	6.6°C
Default Values	63	nciDefaults	SCPTDefaultBehavior	71	0=Use Default (nci) Values, 1=Use last valid value	0
Ice Setpoint	72	nciIceSetpt	UCPT_IceSetpoint	N/A	-9.4 to 3.4°C	-3.9°C
Receive Heartbeat	74	nciRCvHrtBt	SCPTmaxRcvTime	48	0–6553.4 sec. This is only used if nciDefaults equals 0.	0 sec
Maximum Send Time	72	nciMaxSendTime	SCPTmaxSendTime	49	0–6553.4 sec	0 sec
Minimum Send Time	72	nciMinSendTime	SCPTminSendTime	52	0–6553.4 sec	10 sec
Chiller Mode[1]	45	nciMode	SCPT_HVACmode	74	1=HVAC_HEAT, 3=HVAC_COOL, 11=HVAC_ICE	3
Software Identification (Major Version)	77	nciDevMajVer	SCPTdevMajVer	165	0-255	1
Software Identification (Minor Version)	77	nciDevMinVer	SCPTdevMinVer	166	0-255	0
Location	45	SCPT_location	SCPTlocation	166	20 character string representing the physical location of the chiller.	<Blank>

[1]Denotes data points for typical minimum integration.

Other Variables

The following variables are defined in the LONWORKS application but not currently supported by the current MicroTech III chiller unit controller. These variables are not available via the unit controller keypad/display but may be visible from the Building Automation System (BAS) or other LONWORKS configuration tool such as Echelon LonMaker® software.

- nciHeatSetpt
- nviHeatSetpt
- nvoCondPumpHrs
- nvoEntHRWTemp
- nvoLvgHRWTemp

Detailed Protocol Point Information

This section lists the information (i.e. data) that is available to the BAS via BACnet or LONWORKS communication protocols. Each data point may or may not be available on the unit controller keypad/display. If it is available, the keypad/display menu path shows one menu where this item appears. While an item may be available on several keypad menus, only one is shown. Table 9 defines the data points available for the MicroTech III chiller unit controller. Note that the points vary depending on the chiller model and corresponding unit controller application software.

Note: Data points are referred to as "properties" in the BACnet protocol and "network variables" or "configuration parameters" in the LONWORKS protocol. In this document, the text refers to this information as a "data point." In general, the data point is applicable to both BACnet and LONWORKS. When a data point is specific to the BACnet protocol, the text refers to a "property." When a data point is specific to the LONWORKS protocol, the text refers to a "network variable" or "configuration parameter."

Table 9. Data Points for MicroTech III Chiller Models

Data Point	AWS (Application version 2507500204 or earlier)	AWS (Application version 2507500205 or later)	AGZ-D
Active Setpoint	X	X	X
Actual Capacity	X	X	X
Alarm Digital Output	X	X	X
Application Version	X	X	X
Capacity Limit (LonWorks)	X	X	X
Active Capacity Limit (Output)	X	X	X
Capacity Limit Setpoint - Network	X	X	X
Chiller Capacity Limited	X	X	X
Chiller Current	X	X	
Chiller Enable (LonWorks)	X	X	X
Chiller Enable Output	X	X	X
Chiller Enable Setpoint	X	X	X
Chiller Local/Network	X	X	X
Chiller Location	X	X	X
Chiller Mode (LonWorks)	X	X	X
Chiller Mode Output	X	X	X
Chiller Mode Setpoint – Network	X	X	X
Chiller Model	X	X	X
Chiller On/Off	X	X	X
Chiller Status	X	X	X
Circuit Select	X	X	X
Chiller Select	X	X	X
Compressor Select			X
Clear Alarm - Network	X	X	X
Compressor Controller Communication Failed - Circuit #n	X	X	X
Compressor Current	X	X	
Compressor Discharge Refrigerant Temperature	X	X	
Compressor Percent RLA	X	X	
Compressor Power	X	X	
Compressor Run Hours	X	X	X
Compressor Starts	X	X	X
Compressor Suction Refrigerant Temperature	X	X	X
Compressor Voltage	X	X	
Condenser Refrigerant Pressure	X	X	X
Condenser Saturated Refrigerant Temperature	X	X	X
Cool Setpoint – Network	X	X	X
Cool Setpoint (LonWorks)	X	X	X
Current Alarm Descriptor	X	X	X
Current Date & Time	X	X	X

Data Point	AWS (Application version 2507500204 or earlier)	AWS (Application version 2507500205 or later)	AGZ-D
Default Values (LonWorks)	X	X	X
Evaporator Entering Fluid Temperature	X	X	X
Evaporator Flow Switch Status	X	X	X
Evaporator Leaving Fluid Temperature	X	X	X
Evaporator LWT #n	X	X	
Evaporator Pump Run Hours	X	X	X
Evaporator Pump Status	X	X	X
Evaporator Refrigerant Pressure	X	X	X
Evaporator Saturated Refrigerant Temperature	X	X	X
EXV Controller Communication Failed - Circuit #n	X	X	X
Fan Controller Communication Failed	X	X	
Ice Setpoint - Network	X	X	X
Ice Setpoint (LonWorks)	X	X	X
Maximum Send Time (LonWorks)	X	X	X
Minimum Send Time (LonWorks)	X	X	X
Oil Feed Pressure	X	X	
Outdoor Air Temperature	X	X	X
Pump Select	X	X	X
Receive Heartbeat	X	X	X
Request	X	X	X
Run Enabled	X	X	X
Software Identification (Major Version)	X	X	X
Software Identification (Minor Version)	X	X	X
Status	X	X	X
Units	X	X	X
VFD Temp	X	X	

Active Setpoint

Keypad Menu Path Main Menu_Active Setpt=

This read only output network variable indicates 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". The default mode is Cool. There are three possible setpoints. See "Cool Setpoint – Network", "Heat Setpoint – Network" and "Ice Setpoint – Network".

Measurement	Units	Data Type	Usable Range	Default Value
Temperature	°F/°C	BACnet: Real LONWORKS: Fixed Point Scalar signed long	15.08°–149.9° F -9.4°–65.5°C	NA

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	5	Present Value	85
Object Name				
ActiveLvgWaterTarget				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoActiveSetpt	Chiller	temp_p	105	two bytes

Actual Capacity

Keypad Menu Path Main Menu_Unit Capacity=

This read only output network variable indicates 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.

Measurement	Units	Data Type	Usable Range	Default Value
Percent of chiller capacity	NA	BACnet: Real LonWorks: Fixed-Point Scalar signed long	0–100%	NA

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	2	Present Value	85
Object Name				
ChillerCapacity				

LonWorks

LonWorks Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoActCapacity	Chiller	lev_percent	81	two bytes

Alarm Digital Output

Keypad Menu Path No Keypad Equivalent

This read only output network variable indicates whether an alarm condition has occurred. This variable must be polled for alarm notification.

Measurement	Units	Data Type	Usable Range	Default Value
NA	NA	Integer	Enumerated	NA

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Input	3	10	Present Value	85
Object Name				
AlarmDigitalOutput				

Property Values
0 = No Alarm 1 = Alarm

LonWorks

LonWorks Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoChillerstat.in_alarm	Chiller	SNVT_chlr_status	127	1 byte

Valid Range

Value	In_alarm
0	No Alarm Condition
1	In Alarm

Application Version

Keypad Menu Path Main Menu_About Chiller_Unit S/N=

This read-only property identifies the version of application software loaded into the unit controller.

Measurement	Units	Data Type	Usable Range	Default Value
N/A	N/A	CharacterString	N/A	N/A

BACnet

Object Identifier			Property	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Device	8	Variable	Application_Software_Version	12
Object Name				
<Device Object Name>				

Capacity Limit (LONWORKS)

Keypad Menu Path No Keypad Equivalent

Capacity Limit is a measure of the ratio of operating capacity to full capacity expressed in percent. This optional configuration variable sets a default value for the capacity limit of the chiller (nviCapacityLim), unless the configuration property, nciDefaults = 1 (see Default Values). 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.

Measurement	Units	Data Type	Usable Range	Default Value
Percent of maximum capacity	NA	Fixed-Point Scalar signed long	0% to 100%.	100%

LonWorks

The chiller object uses the optional configuration value of nciCapacityLim on power-up or loss of communication unless the configuration parameter nciDefaults = 1 (see Default Values).

Loss of communications is determied 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.

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size	SCPT_Reference	SCPT Index
nciCapacityLim	Chiller	SNVT_lev_percent	81	two bytes	SCPTlimitChlrCap	81

Active Capacity Limit Output

Keypad Menu Path No Keypad Equivalent

This read only output network variable is a measure 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.

Measurement	Units	Data Type	Usable Range	Default Value
Percent of maximum capacity	NA	BACnet: Real LONWORKS: Fixed-Point Scalar signed long	0% to 100%.	NA

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	1	Present Value	85
Object Name				
ActiveCapacityLimit				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size	SCPT_Reference	SCPT Index
nvoCapacityLim (output)	Chiller	lev_percent	81	two bytes	NA	NA

Capacity Limit Setpoint - Network

Keypad Menu Path Main Menu_View/Set Unit_Status/Settings_Netwrk Cap Lim=

This read/write input network variable 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.

Measurement	Units	Data Type	Usable Range	Default Value
Percent of maximum capacity	NA	BACnet: Real LONWORKS: Fixed-Point Scalar signed long	0% to 100%	100%

BACnet

This read or read/write property sets the maximum capacity limit of the chiller. This level may be adjusted, but not above the factory-specified limit. 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.

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	3	Present Value	85
Object Name				
NetworkCapacityLimitPct				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size	SCPT_Reference	SCPT Index
nviCapacityLim (input)	Chiller	lev_percent	81	two bytes	NA	NA

Chiller Capacity Limited

Keypad Menu Path No Keypad Equivalent

This read only output network variable indicates whether conditions may exist that prevent the chiller from reaching full capacity.

Measurement	Units	Data Type	Usable Range	Default Value
Status	NA	BACnet: Enumerated LonWorks: Structure	See Below	NA

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Input	3	6	Present Value	85
Object Name				
ChillerLimited				

Property Values
0 = Not Limited(Inactive) 1 = Limited(Active)

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoChillerStat	Chiller	chlr_status	127	3 bytes

Property Values (Limited)
0 = Not Limited(Inactive) 1 = Limited(Active)

Structure

```
typedef struct {
    chiller_t   chlr_run_mode;
    hvac_t    chlr_op_mode;
    struct{
        unsigned in_alarm :1;          // offset 0
        unsigned run_enabled :1;       // offset 1
        unsigned local :1;             // offset 2
        unsigned limited :1;           // offset 3
        unsigned chw_flow :1;          // offset 4
        unsigned condw_flow :1;        // offset 5
    /* The last two bits (offset 6) are not defined */
    } chlr_state;
} SNVT_chlr_status;
```

Chiller Current

Keypad Menu Path Main Menu_View/Set Unit_Power Conservation_Unit Current=

This read only output network variable indicates the average current of the chiller. Compressor currents may be added together to calculate this value.

Measurement	Units	Data Type	Usable Range	Default Value
Electric Current	Amperes	BACnet: Real LONWORKS: Fixed Point Scalar signed long	0-10,000	NA

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	6	Present Value	85
Object Name				
ChillerCurrent				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoCurrent	McQuay_Chiller	amp	1	two bytes

Chiller Enable (LONWORKS)

Keypad Menu Path No Keypad Equivalent

This mandatory LONWORKS configuration variable sets the default power-up and restart mode of the chiller (nviChillerEnable), unless the configuration parameter nciDefaults = 1 (See Default Values). If nciDefaults = 1, nviChillerEnable will retain the last valid value when power is restored. Refer to the unit controller Operating Manual for variable values.

Measurement	Units	Data Type	Usable Range	Default Value
Chiller State	NA	structure	Enumerated	0 = Disable

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size	SCPT_Reference	SCPT_ Index
nciChillerEnable	Chiller	switch	95	two bytes	SCPTpwrUpState	73

The chiller object uses the configuration value of nciChillerEnable on power-up or loss of communication unless the configuration parameter nciDefaults =1 (See Default Values).

Loss of communications is determied 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.

Valid Range

State	Value	Chiller Enable
0	unused	Request Chiller Off
1	unused	Request Chiller Auto (run)
-1 (0xff)	unused	Invalid

Chiller Enable Output

Keypad Menu Path Main Menu_View/Set Unit_Status/Settings_Netwrk En SP=

This read only output network variable indicates if operation of the chiller is disabled or enabled. If the chiller is disabled, it cannot run. If it is enabled it is allowed to run.

Measurement	Units	Data Type	Usable Range	Default Value
Chiller State	NA	BACnet: Enumerated LONWORKS: structure	See Below	0 = Disabled

BACnet

This read only property indicates if operation of the chiller is disabled or enabled.

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Input	3	7	Present Value	85
Object Name				
ChillerEnableOutput				

Property Values
0 = Disable(Inactive) 1 = Enable(Active)

LonWorks

This output network variable indicates whether or not the chiller is enabled.

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size	SCPT_Reference	SCPT_ Index
nvoChillerEnable	McQuay_Chiller	Switch	95	two bytes	NA	NA

Valid Range

State	Value	Chiller Enable Output
0	unused	Request Chiller Off
1	unused	Request Chiller Auto (run)
-1 (0xff)	unused	Invalid

Chiller Enable Setpoint

Keypad Menu Path No Keypad Equivalent

This read/write input network variable is used to disable or enable chiller operation over the network. The default is Disable. 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.

Measurement	Units	Data Type	Usable Range	Default Value
Chiller State	NA	BACnet: Enumerated LONWORKS: structure	See Below	0 = Disabled

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Value	5	2	Present Value	85
Object Name				
ChillerEnableStp				

Property Values
0 = Disable(Inactive) 1 = Enable(Active)

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size	SCPT_Reference	SCPT_Index
nviChillerEnable	Chiller	Switch	95	two bytes	NA	NA

Valid Range

State	Value	Chiller Enable Setpoint
0	unused	Request Chiller Off
1	unused	Request Chiller Auto (run)
-1 (0xff)	unused	Invalid

Chiller Local/Network

Keypad Menu Path Main Menu_View/Set Unit_Status/Settings_Control Source=

This read only output network variable indicates whether the chiller is in local control or allowed to be controlled remotely over the network (i.e. BAS). The value can only be changed locally (i.e. 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

Measurement	Units	Data Type	Usable Range	Default Value
Mode	NA	BACnet: Enumerated LonWorks: Structure	See Below	NA

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Input	3	3	Present Value	85
Object Name				
ChillerLocalRemote				

Property Values
0 = Network 1 = Local

LonWorks

The LONWORKS equivalent of this data point is part of the Chiller Status output network variable.

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size	Data Type
nvoChillerStat.local	Chiller	chlr_status	127	3 bytes	Structure

Property Values (local)
0 = Network 1 = Local

Structure

```
typedef struct {
      chiller_t  chlr_run_mode;
      hvac_t    chlr_op_mode;
      struct{
            unsigned   in_alarm :1;                  // offset 0
            unsigned   run_enabled :1;               // offset 1
            unsigned   local :1;                     // offset 2
            unsigned   limited :1;          // offset 3
            unsigned   chw_flow :1;                  // offset 4
            unsigned   condw_flow :1;  // offset 5
      /* The last two bits (offset 6) are not defined */
      } chlr_state;
} SNVT_chlr_status;
```

Chiller Location

Keypad Menu Path No Keypad Equivalent

This read/write parameter 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.

Measurement	Units	Data Type	Usable Range	Default Value
NA	NA	Structure	20 character string maximum.	Blank

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Device	8	Variable	Location	58
Object Name				
Location				

LonWorks

Although the LONWORKS variable is 31 bytes long, the application only allows for a 20 character string.

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size	SCPT_Reference	SCPT Index
nciLocation	Chiller	str_asc	36	31 bytes	SCPT_location	17

Chiller Mode (LONWORKS)

Keypad Menu Path No Keypad Equivalent

This optional LONWORKS configuration network parameter establishes the default operating mode of the chiller, unless the configuration parameter nciDefaults = 1 (See Default Values). If nciDefaults = 1, the last valid value is used.

Measurement	Units	Data Type	Usable Range	Default Value
HVAC Mode	NA	Unsigned Integer	Enumerated	3 = Cool

LonWorks

Chiller Mode Setpoint – Network (nviMode) is set equal to this configuration value (nciMode) on power-up or loss of communication unless the configuration parameter nciDefaults =1 (See Default Values).

Loss of communications is determied 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.

All enumerations are not used for this data point. Only the following enumerations are used. Writing any other value from LONWORKS will result in HVAC_COOL (3) being written.

The MicroTech III Chiller Unit Controller only supports Ice and Cool modes. If any other mode is written, the chiller will be set to Cool mode.

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size	SCPT Reference	SCPT Index
nciMode	Chiller	hvac_mode	108	one byte	SCPT_HVACmode	74

Property Values
1 = HVAC_HEAT 3 = HVAC_COOL 11 = HVAC_ICE

Chiller Mode Output

Keypad Menu Path Main Menu_View/Set Unit_Status/Settings_Netwrk Mode SP=

This read only output network variable indicates the current operating mode of the chiller.

Measurement	Units	Data Type	Usable Range	Default Value
HVAC Mode	NA	BACnet: Unsigned Integer LONWORKS: Fixed Point Scalar - unsigned long	See Below	NA

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Multi-state Value	19	2	Present Value	85
Object Name				
ActiveMode				

Property Values
1 = ICE 2 = COOL 3 = HEAT 4= COOL/HEAT RECOVERY 5=DEFROST

LonWorks

The LONWORKS equivalent of this data point is part of the Chiller Status output network variable.

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoChillerStat	Chiller	chlr_status	127	3 bytes

Property Values
1= HVAC_Heat 3= HVAC_Cool 11= HVAC_Ice Other states are unused

Enumeration Correspondence

BACnet		Lon	
1	Ice	11	HVAC_ICE
2	Cool	3	HVAC_Cool
3	Heat	1	HVAC_Heat
4	Heat/Cool Recovery	3	HVAC_Cool
5	Defrost	1	HVAC_Heat

Chiller Mode Setpoint - Network

Keypad Menu Path No Keypad Equivalent

This read/write input network variable is used to change the operating mode of the chiller. The default is Cool.

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.

The MicroTech III Chiller Unit Controller only supports Ice and Cool modes. If any other mode is written, the chiller will be set to Cool mode.

Measurement	Units	Data Type	Usable Range	Default Value
HVAC Mode	NA	BACnet: Unsigned Integer LONWORKS: Fixed Point Scalar - unsigned long	See Below	Cool

BACnet

This commandable property 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.

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Multi-state Value	19	3	Present Value	85
Object Name				
ChillerOperationMode				

Property Values
1 = ICE 2 = COOL 3 = HEAT 4 = COOL/HEAT RECOVERY

LonWorks

This input network variable 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.

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size	SCPT Reference	SCPT Index
nviMode	Chiller	hvac_mode	108	one byte	NA	NA

hvac_mode

All enumerations are not used for this data point. Only the following enumerations are used. Writing any other value from LONWORKS will result in HVAC_COOL (3) being written.

Value	Identifier	Notes
1	HVAC_HEAT	Heating only
3	HVAC_COOL	Cooling only
11	HVAC_ICE	Ice-making mode

Enumeration Correspondence

BACnet		Lon	
1	Ice	11	HVAC_ICE
2	Cool	3	HVAC_Cool
3	Heat	1	HVAC_Heat
4	Heat/Cool Recovery	3	HVAC_Cool

Chiller Model

Keypad Menu Path Main Menu_About Chiller_Model **#=**

This BACnet read only output network variable indicates the model of the chiller.

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Device	8	Variable	Model Name	70
Object Name				
<Device Object Name>				

Chiller On/Off

Keypad Menu Path No Keypad Equivalent

This output network variable indicates the current state of the chiller.

Measurement	Units	Data Type	Valid Range	Default Value
Chiller State	NA	BACnet: Enumerated LONWORKS: structure	See Below	NA

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Input	3	4	Present Value	85
Object Name				
UnitOnOff				

Property Values
0 = Off
1 = On

LonWorks

The LONWORKS equivalent of this data point is part of the Chiller Status network variable output.

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.

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoOnOff	Chiller	switch	95	two bytes

Chiller Status

Keypad Menu Path No Keypad Equivalent

This read only output network variable indicates the unit status of the chiller.

Measurement	Units	Data Type	Usable Range	Default Value
State	NA	Unsigned Integer	See Below	NA

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Multi-state Value	19	1	Present Value	85
Object Name				
UnitStatus				

Property Values
1 = Off 2 = Start 3 = Run 4 = Preshutdown 5 = Service

LonWorks

Chiller Status includes the Run Mode. The Run Mode is defined as Off, Start, Run, Pre-shutdown and Service. This output network variable indicates the main running mode and states of the chiller. The Run Mode provides the primary running states of a chiller and the state provides an indicator of other conditions present (see Structure section below for details.)

Measurement	Units	Data Type	Usable Range	Default Value
Chiller Status	NA	Structure	See Below	NA

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoChillerstat.chlr_run_mode	Chiller	chlr_status	127	3 bytes

Property Values
-1 (0xff) = Invalid (NULL) 0 = Off 1 = Start 2 = Run 3 = Preshutdown 4 = Service

Structure

```
typedef struct {
    chiller_t       chlr_run_mode;
    hvac_t          chlr_op_mode;
    struct{
        unsigned    in_alarm    :1;
        unsigned    run_enabled :1;
        unsigned    local       :1;
        unsigned    limited     :1;
        unsigned    chw_flow    :1;
        unsigned    condw_flow  :1;
    } chlr_state;
} SNVT_chlr_status;
```

Chiller Run Mode (chiller_t)

This data point uses only the following enumerations:

Value	Identifier	Notes
0	CHLR_OFF	Chiller off
1	CHLR_START	Chiller in start mode
2	CHLR_RUN	Chiller in run mode
3	CHLR_PRESHUTDN	Chiller in pre shutdown mode
4	CHLR_SERVICE	Chiller in service mode

Chiller Operating Mode (hvac_t)

This data point uses only the following enumerations:

Value	Identifier	Notes
1	HVAC_HEAT	Heating only
3	HVAC_COOL	Cooling only
11	HVAC_ICE	Ice-making mode

Chiller State

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. (See Chiller Local/Network on Page 44)
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.

Circuit Select

Keypad Menu Path No Keypad Equivalent

These input network variables select the circuit (number 1 - 4) that is interrogated for simple interfaces. The unit controller returns the information for the selected compressor/circuit. First, select a compressor and circuit and then interrogate the selected circuit. This variable selects a circuit for the following variables:

Name
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

Measurement	Units	Data Type	Usable Range	Default Value
Event Count	NA	LONWORKS: Fixed Point Scalar - unsigned long	1-4	Circuit No. 1

BACnet

No equivalent BACnet point.

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nviCircuitSelect	McQuay_Chiller	count	8	two bytes

Valid Range

Value	Description
1	Circuit No. 1
2	Circuit No. 2
3	Circuit No. 3
4	Circuit No. 4

Compressor Select

Keypad Menu Path No Keypad Equivalent

These input network variables select the compressor (number 1 - 3) that is interrogated for simple interfaces. The unit controller returns the information for the selected compressor/circuit. First, select a compressor and circuit and then interrogate the selected compressor. This variable selects a compressor for the following variables:

Name
Compressor Run Hours
Compressor Starts

Measurement	Units	Data Type	Usable Range	Default Value
Event Count	NA	LONWORKS: Fixed Point Scalar - unsigned long	1-3	Comp No. 1

BACnet

No equivalent BACnet point.

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nviCompSelect	McQuay_Chiller	count	8	two bytes

Valid Range

Value	Description
1	Compressor No. 1
2	Compressor No. 2
3	Compressor No. 3

Clear Alarm - Network

Keypad Menu Path No Keypad Equivalent

This read/write network variable clears all active alarms. Many alarms are auto-clearing alarms (refer to the chiller operation manual for details). The following list contains the alarms that can be cleared from the network:

- UNIT SHUTDOWN - Evaporator Water Flow Loss
- UNIT SHUTDOWN–Evaporator Leaving Water Temp Low (Freeze)
- CIRCUIT SHUTDOWN – Evaporator 1 Freeze Protection
- CIRCUIT SHUTDOWN – Evaporator 2 Freeze Protection

Measurement	Units	Data Type	Usable Range	Default Value
NA	NA	Integer	Enumerated	0=Normal

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Value	5	8	Present Value	85
Object Name				
ClearAlarm				

Property Values
0=Normal 1=Clear Alarms

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nviClearAlarm	McQuay_Chiller	switch	95	two bytes

Valid Range

State	Value	Clear Alarm
0	unused	No Alarm
1	unused	Clear Alarm

Compressor Controller Communication Failed - Circuit #n

Keypad Menu Path No Keypad Equivalent

This commandable network variable is used to generate the Compressor Controller Communication Failed – Circuit #n alarm. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Usable Range	Default Value
NA	NA	Integer	Enumerated	N/A

BACnet

Circuit #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Value	5	9	Present Value	85
Object Name				
Comp1CntrlrCommFail				

Property Values
0=NoAlarm
1=InAlarm

Circuit #2

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Value	5	10	Present Value	85
Object Name				
Comp2CntrlrCommFail				

Property Values
0=NoAlarm
1=InAlarm

Circuit #3

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Value	5	11	Present Value	85
Object Name				
Comp3CntrlrCommFail				

Property Values
0=NoAlarm
1=InAlarm

Circuit #4

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Value	5	12	Present Value	85
Object Name				
Comp4CntrlrCommFail				

Property Values
0=NoAlarm
1=InAlarm

Compressor Current

Keypad Menu Path 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=

This read only variable indicates the average current of the compressor motor. BACnet has three objects for each compressor. The Present Value property of each object is the same for each compressor. BACnet Intrinsic Alarming supports the ability for each of the four objects to generate separate alarms. For LONWORKS, the compressor is selected with Circuit Select.

Measurement	Units	Data Type	Usable Range	Default Value
Electric Current	Amperes	BACnet: Real LONWORKS: Fixed Point Scalar signed long	0-10,000	NA

BACnet

Circuit #1 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	9	Present Value	85
Object Name				
C1Comp1Current				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	181	Present Value	85
Object Name				
C1Co1CurrentUnl				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	184	Present Value	85
Object Name				
C1Co1CurrentHold				

Circuit #2 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	12	Present Value	85
Object Name				
C2Comp1Current				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	182	Present Value	85
Object Name				
C2Co1CurrentUnl				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	185	Present Value	85
Object Name				
C2Co1CurrentHold				

Circuit #3 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	15	Present Value	85
Object Name				
C3Comp1Current				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	183	Present Value	85
Object Name				
C3Co1CurrentUnl				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	186	Present Value	85
Object Name				
C3Co1CurrentHold				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoCurrent	McQuay_Chiller	amp_ac	139	two bytes

Compressor Discharge Refrigerant Temperature

Keypad Menu Path 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

This read only output network variable indicates the current refrigerant temperature discharged from the compressor. BACnet uses a separate object for each compressor/circuit combination. For LONWORKS, the circuit is selected with Circuit Select.

Measurement	Units	Data Type	Usable Range	Default Value
Temperature	°F/°C	BACnet: Real LONWORKS: Fixed Point Scalar signed long	-40°– 249.8°F -40°– 121°C	NA

BACnet

Circuit #1 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	63	Present Value	85
Object Name				
C1Comp1DischargeTemp				

Circuit #2 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	66	Present Value	85
Object Name				
C2Comp1DischargeTemp				

Circuit #3 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	69	Present Value	85
Object Name				
C3Comp1DischargeTemp				

Circuit #4 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	72	Present Value	85
Object Name				
C4Comp1DischargeTemp				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoCompDisTemp	McQuay_Chiller	temp_p	105	two bytes

Compressor Percent RLA

Keypad Menu Path 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=

This read only variable indicates the current percent RLA for the compressor motor of the compressor. BACnet uses a separate variable for each compressor. For LONWORKS,, the compressor is selected with Circuit Select.

Measurement	Units	Data Type	Usable Range	Default Value
Percent RLA	Percent RLA	BACnet: Real LONWORKS: Fixed-Point Scalar signed long	0-110%	NA

BACnet

Circuit #1 Compressor #1 - Variable Details

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	8	Present Value	85
Object Name				
C1Comp1MotorCurrentPercent				

Circuit #2 Compressor #1 - Variable Details

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	11	Present Value	85
Object Name				
C2Comp1MotorCurrentPercent				

Circuit #3 Compressor #1 - Variable Details

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	14	Present Value	85
Object Name				
C3Comp1MotorCurrentPercent				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoCompPercRLA	McQuay_Chiller	lev_percent	81	two bytes

Compressor Power

Keypad Menu Path No Keypad Equivalent

This read only variable indicates the current power of the compressor motor.

BACnet uses a separate variable for each compressor. For LONWORKS, the compressor is selected with Circuit Select.

Measurement	Units	Data Type	Usable Range	Default Value
Power	kiloWatts	BACnet: Real LONWORKS: Unsigned Long	0-3500	NA

BACnet

Circuit #1 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	45	Present Value	85
Object Name				
C1Comp1Kilowatts				

Circuit #2 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	48	Present Value	85
Object Name				
C2Comp1Kilowatts				

Circuit #3 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	51	Present Value	85
Object Name				
C3Comp1Kilowatts				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoKiloWattts	McQuay_Chiller	power_kilo	28	2 bytes

Compressor Run Hours

Keypad Menu Path 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=

This variable indicates the number of hours that the compressor motor has been turned on. BACnet uses a separate read/write object for each compressor/circuit combination. For LONWORKS, the circuit and compressor are selected with Circuit Select and Compressor Select. With LonWorks the point is read only.

Measurement	Units	Data Type	Usable Range	Default Value
Event Count	Hours	BACnet: Real LONWORKS: Float Type unsigned long	0 –999,999	NA

BACnet

Circuit #1 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	74	Present Value	85
Object Name				
C1Comp1Hours				

Circuit #1 Compressor #2

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	75	Present Value	85
Object Name				
C1Comp2Hours				

Circuit #1 Compressor #3

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	76	Present Value	85
Object Name				
C1Comp3Hours				

Circuit #2 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	77	Present Value	85
Object Name				
C2Comp1Hours				

Circuit #2 Compressor #2

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	78	Present Value	85
Object Name				
C2Comp2Hours				

Circuit #2 Compressor #3

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	79	Present Value	85
Object Name				
C2Comp3Hours				

Circuit #3 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	80	Present Value	85
Object Name				
C3Comp1Hours				

Circuit #4 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	83	Present Value	85
Object Name				
C4Comp1Hours				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoCompHrs	McQuay_Chiller	count_f (51)	8	Two bytes

Compressor Starts

Keypad Menu Path 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=

This network variable indicates the number of times the compressor motor has been started. BACnet uses a separate read/write object for each compressor/circuit combination. For LONWORKS, the circuit and compressor are selected with Circuit Select and Compressor Select. With LonWorks the point is read only.

Measurement	Units	Data Type	Usable Range	Default Value
Event Count	NA	BACnet: Real LONWORKS: Fixed Point Scalar - unsigned long	0 –65,535	NA

BACnet

Circuit #1 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	92	Present Value	85
Object Name				
C1Comp1Starts				

Circuit #1 Compressor #2

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	93	Present Value	85
Object Name				
C1Comp2Starts				

Circuit #1 Compressor #3

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	94	Present Value	85
Object Name				
C1Comp3Starts				

Circuit #2 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	95	Present Value	85
Object Name				
C2Comp1Starts				

Circuit #2 Compressor #2

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	96	Present Value	85
Object Name				
C2Comp2Starts				

Circuit #2 Compressor #3

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	97	Present Value	85
Object Name				
C2Comp3Starts				

Circuit #3 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	98	Present Value	85
Object Name				
C3Comp1Starts				

Circuit #4 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	101	Present Value	85
Object Name				
C4Comp1Starts				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoCompStarts	McQuay_Chiller	count	8	two bytes

Compressor Suction Refrigerant Temperature

Keypad Menu Path 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=

This read only output network variable indicates the current refrigerant temperature entering the compressor. BACnet uses a separate read-only object for each compressor/circuit combination. For LONWORKS, see Circuit Select.

Measurement	Units	Data Type	Usable Range	Default Value
Temperature	°F/°C	BACnet: Real LONWORKS: Fixed Point Scalar signed long	-40°–230°F -40°–110°C	NA

BACnet

Circuit #1 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	105	Present Value	85
Object Name				
C1Comp1SuctionTemp				

Circuit #2 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	108	Present Value	85
Object Name				
C2Comp1SuctionTemp				

Circuit #3 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	111	Present Value	85
Object Name				
C3Comp1SuctionTemp				

Circuit #4 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	114	Present Value	85
Object Name				
C4Comp1SuctionTemp				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoSuctionTemp	McQuay_Chiller	temp_p	105	two bytes

Compressor Voltage

This read only variable indicates the average voltage of the compressor motor. BACnet uses a separate output for each compressor. For L LONWORKS, see Circuit Select.

Measurement	Units	Data Type	Usable Range	Default Value
Electric Voltage	VAC	BACnet: Real LONWORKS: Fixed Point Scalar unsigned long	0-15,000	NA

BACnet

Circuit #1 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	27	Present Value	85
Object Name				
C1Comp1Voltage				

Circuit #2 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	30	Present Value	85
Object Name				
C2Comp1Voltage				

Circuit #3 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	33	Present Value	85
Object Name				
C3Comp1Voltage				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoVoltage	McQuay_Chiller	Volt_ac	138	two bytes

Condenser Refrigerant Pressure

Keypad Menu Path 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 =

This read only output network variable indicates the current condenser pressure. BACnet uses a separate read-only object for each condenser. For LONWORKS, see Circuit Select.

Measurement	Units	Data Type	Usable Range	Default Value
Pressure (gauge)	Psi or kPa	BACnet: Real LONWORKS: Fixed-Point Scalar signed long	0-410.019 Psi (700 Psi for R410A) 0-2827 kPa, (4826 kPa for R410A)	NA

BACnet

Condenser #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	99	Present Value	85
Object Name				
Cond1RefPressure				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	157	Present Value	85
Object Name				
Cond1RefPressureInhLoad				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	161	Present Value	85
Object Name				
Cond1RefPressureUnload				

Condenser #2

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	100	Present Value	85
Object Name				
Cond2RefPressure				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	158	Present Value	85
Object Name				
Cond2RefPressureInhLoad				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	162	Present Value	85
Object Name				
Cond2RefPressureUnload				

Condenser #3

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	101	Present Value	85
Object Name				
Cond3RefPressure				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	159	Present Value	85
Object Name				
Cond3RefPressureInhLoad				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	163	Present Value	85
Object Name				
Cond3RefPressureUnload				

Condenser #4

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	102	Present Value	85
Object Name				
Cond4RefPressure				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	160	Present Value	85
Object Name				
Cond4RefPressureInhLoad				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	164	Present Value	85
Object Name				
Cond4RefPressureUnload				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoCondRefPres	McQuay_Chiller	SNVT_press	30	two bytes

*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

Keypad Menu Path 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 =

This read only output network variable indicates the current saturated refrigerant temperature of the condenser. BACnet uses a separate read-only object for each condenser. For LONWORKS, see Circuit Select.

Measurement	Units	Data Type	Usable Range	Default Value
Temperature	°F/°C	BACnet: Real LONWORKS: Fixed Point Scalar signed long	-14.98-185°F -26.1-85°C	NA

Condenser #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	44	Present Value	85
Object Name				
Cond1SatRefTemp				

Condenser #2

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	45	Present Value	85
Object Name				
Cond2SatRefTemp				

Condenser #3

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	46	Present Value	85
Object Name				
Cond3SatRefTemp				

Condenser #4

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	47	Present Value	85
Object Name				
Cond4SatRefTemp				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoCondSatRefTmp	McQuay_Chiller	SNVT_temp_p	30	two bytes

Cool Setpoint - Network

Keypad Menu Path Main Menu_View/Set Unit_Status/Settings_Netwrk Cool SP=

This read/write input network variable is used to change 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 default is 44°F. 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).

Measurement	Units	Data Type	Usable Range	Default Value
Temperature	°F/°C	BACnet: Real LONWORKS: Fixed Point Scalar signed long	24.98°-60.08°F -3.9°-15.6°C	43.88°F/6.6°C

BACnet

This commandable property sets the temperature of the Leaving Chilled Fluid. This level may be adjusted via an operator workstation or other network device.

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	4	Present Value	85
Object Name				
NetworkCoolTempSetpoint				

Note: If the BACnet communication module is attached to a unit controller that also has a LONWORKS and/or Modbus communication module attached, BACnet must write at priority 8 or higher. LONWORKS and Modbus write to this point at priority 8.

LonWorks

This input network variable 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.

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size	SCPT_Reference	SCPT Index
nviCoolSetpt	Chiller	temp_p	105	two bytes	NA	NA

Cool Setpoint (LONWORKS)

Keypad Menu Path No Keypad Equivalent

The Cool Setpoint Network variable (nviCoolSetpt) is set to this configuration value (nciCoolsetpt) on power-up or loss of communication unless the configuration parameter 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 communications is determied by Receive Heartbeat (nciRCvHrtBt). If Receive Heartbeat is greater than zero, then communications 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.

Measurement	Units	Data Type	Usable Range	Default Value
Temperature	°F/°C	Fixed Point Scalar signed long	-3.9° to 15.6°C	6.6°C

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size	SCPT_Reference	SCPT Index
nciCoolSetpt	Chiller	temp_p	105	two bytes	SCPT_CoolSetpoint	75

Current Alarm Descriptor

Keypad Menu Path Alarms_Active Alarms

This network output variable indicates the current alarm in the chiller. The type of alarm is included in the text string. This point can accommodate 15 simultaneous alarms. Alarm messages are sent sequentially once every 10 seconds.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm Message	NA	Structure	0–30 characters plus a NUL terminator	NA

Variable Details

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoAlarmDescr	Chiller	str_asc	36	31 bytes max

Current Date & Time

Keypad Menu Path (Chiller Date & Time) Main Menu_View/Set Unit_Date/TimeSchedules_Actual Time= AND Main Menu_View/Set Unit_Date/TimeSchedules_Actual Date=

This network variable is used to synchronize the chiller's internal time clock with the BAS.

Measurement	Units	Data Type	Valid Range	Default Value
Date/Time	NA	Structure	See Below	NA

BACnet

No equivalent value. BACnet writes to DM-TS-B and DM-UTC-B services.

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nviActTime	McQuay_Chiller	SNVT_time_stamp	84	7 bytes

Structure

```
typedef struct {
    signed  long      year;       Range = 0..3000
    unsigned  short month;        Range = 0..12
    unsigned  short day;          Range = 0..31
    unsigned  short hour;         Range = 0..23
    unsigned  short minute;       Range = 0..59
    unsigned  short second;       Range = 0..59
} SNVT_time_stamp;
```

Default Values (LONWORKS)

Keypad Menu Path No Keypad Equivalent

This configuration network parameter determines which set of values is used on power up and communication failure. The choice is the stated default (nci) values or last valid value. This is used for the following configuration network variables:

- Chiller Enable
- Capacity Limit
- Cool Setpoint
- Heat Setpoint
- Mode

Measurement	Units	Data Type	Usable Range	Default Value
Chiller State	NA	structure	Enumerated	0 = Use Default (nci) Values

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size	SCPT_Reference	SCPT Index
nciDefaults	Chiller	switch	95	two bytes	SCPT_DefaultBehavior	71

Valid Range

Value Field	unused	
State Field	0	Use Default (nci) Values
	1	Use last valid value

Evaporator Entering Fluid Temperature

Keypad Menu Path Main Menu_Evaporator EWT=

This read-only output network variable indicates the temperature of the fluid entering the evaporator.

Measurement	Units	Data Type	Usable Range	Default Value
Temperature	°F/°C	BACnet: Real LONWORKS: Fixed Point Scalar signed long	-40–230°F -40°–110°C	NA

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	1	Present Value	85
Object Name				
EntEvapWaterTemp				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoEntChWTemp	Chiller	temp_p	105	two bytes

Evaporator Flow Switch Status

Keypad Menu Path No Keypad Equivalent

This read-only output network indicates the status of the fluid flowing through the evaporator.

Measurement	Units	Data Type	Usable Range	Default Value
Flow State	NA	BACnet: Enumerated LONWORKS: Structure	See Below	NA

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Input	3	2	Present Value	85
Object Name				
EvapWaterFlowStatus				

Property Values
0 = No Flow(Inactive)
1 = Flow(Active)

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoChillerstat.CHW_flow	Chiller	chlr_status	127	3 bytes

Property Values (CHW_flow)
0 = No Flow(Inactive)
1 = Flow(Active)

Structure

```
typedef struct {
    chiller_t       chlr_run_mode;
    hvac_t   chlr_op_mode;
    struct{
        unsigned   in_alarm :1;          // offset 0
        unsigned   run_enabled :1;       // offset 1
        unsigned   local :1;             // offset 2
        unsigned   limited :1;           // offset 3
        unsigned   chw_flow :1;          // offset 4
        unsigned   condw_flow :1;        // offset 5
    /* The last two bits (offset 6) are not defined */
    } chlr_state;
} SNVT_chlr_status;
```

Evaporator Leaving Fluid Temperature

Keypad Menu Path Main Menu_Evaporator LWT=

This read-only output network variable indicates the current temperature of the fluid leaving the evaporator.

Measurement	Units	Data Type	Usable Range	Default Value
Temperature	°F/°C	BACnet: Real LONWORKS: Fixed Point Scalar signed long	-40–230°F -40°–110°C	NA

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	2	Present Value	85
Object Name				
LvgEvapWaterTempUnit				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoLvgChWTemp	Chiller	temp_p	105	two bytes

Evaporator LWT #n

This object is present only for Intrinsic Alarming. It generates the Evaporator Leaving Water Temperature #n Sensor Fault and CIRCUIT SHUTDOWN - Evaporator #n Freeze Protection alarms.

Measurement	Units	Data Type	Usable Range	Default Value
Temperature	°F/°C	BACnet: Real	N/A	NA

BACnet

Evap LWT #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	151	Present Value	85
Object Name				
EvapLWT1				

Evap LWT #2

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	152	Present Value	85
Object Name				
EvapLWT2				

Evaporator Pump Run Hours

Keypad Menu Path Main Menu_View/Set Unit_Status/Settings_Evap Pmp 1 Hrs= AND
Main Menu_View/Set Unit_Status/Settings_Evap Pmp 2 Hrs=

This read/write variable indicates the number of hours that the pump motor has been turned on. BACnet uses separate variable for each pump. For LONWORKS, see Pump Select.

Measurement	Units	Data Type	Usable Range	Default Value
Event Count	NA	BACnet: Real LONWORKS: Fixed-Point unsigned long	0 –999,999	NA

BACnet

Pump #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	112	Present Value	85
Object Name				
EvapPump1OperHours				

Pump #2

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	113	Present Value	85
Object Name				
EvapPump2OperHours				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoEvapPumpHrs	McQuay_Chiller	count_f (51)	8	two bytes

Evaporator Pump Status

Keypad Menu Path No Keypad Equivalent

This read-only output network variable indicates if the pump has been commanded On or Off. BACnet uses separate outputs for each pump. For LONWORKS, see Pump Select.

Measurement	Units	Data Type	Usable Range	Default Value
Flow State	NA	BACnet: Enumerated LONWORKS: Structure	See Below	NA

BACnet

Pump #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Input	3	8	Present Value	85
Object Name				
EvapPump1State				

Property Values
0 = Pump Off Request
1 = Pump On Request

Pump #2

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Input	3	9	Present Value	85
Object Name				
EvapPump2State				

Property Values
0 = Pump Off Request
1 = Pump On Request

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoChWPump	McQuay_Chiller	switch	95	two bytes

Valid Range

State	Value	Pump Status
0	unused	Pump Off Request
1	unused	Pump On Request

Evaporator Refrigerant Pressure

Keypad Menu Path 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

This read-only variable indicates the current refrigerant pressure in the evaporator. BACnet has four objects for each compressor. The Present Value property of each object is the same for each compressor. BACnet Intrinsic Alarming supports the ability for each of the four objects to generate separate alarms. For LONWORKS, see Circuit Select.

Measurement	Units	Data Type	Usable Range	Default Value
Pressure (gauge)	Psi or kPa	BACnet: Real LONWORKS: Fixed-Point Scalar signed long	-349.974–349.974 psi -2413 kPa – 2413 kPa	NA

BACnet

Evaporator #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	141	Present Value	85
Object Name				
C1EvapRefPressure				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	153	Present Value	85
Object Name				
C1EvapRefPressureUnload				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	169	Present Value	85
Object Name				
C1EvapRefPressureStrtFail				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	173	Present Value	85
Object Name				
C1EvapRefPressureInhLoad				

Evaporator #2

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	142	Present Value	85
Object Name				
C2EvapRefPressure				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	154	Present Value	85
Object Name				
C2EvapRefPressureUnload				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	170	Present Value	85
Object Name				
C2EvapRefPressureStrtFail				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	174	Present Value	85
Object Name				
C2EvapRefPressureInhLoad				

Evaporator #3

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	143	Present Value	85
Object Name				
C3EvapRefPressure				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	155	Present Value	85
Object Name				
C3EvapRefPressureUnload				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	171	Present Value	85
Object Name				
C3EvapRefPressureStrtFail				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	175	Present Value	85
Object Name				
C3EvapRefPressureInhLoad				

Evaporator #4

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	144	Present Value	85
Object Name				
C4EvapRefPressure				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	156	Present Value	85
Object Name				
C4EvapRefPressureUnload				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	172	Present Value	85
Object Name				
C4EvapRefPressureStrtFail				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	176	Present Value	85
Object Name				
C4EvapRefPressureInhLoad				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoEvapRefPress	McQuay_Chiller	SNVT_press	30	two bytes

*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

Keypad Menu Path 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=

This read only output network parameter indicates the current saturated refrigerant temperature of the evaporator. For BACnet, there is a separate output for each condenser. For LONWORKS, see Circuit Select.

Measurement	Units	Data Type	Usable Range	Default Value
Temperature	°F/°C	BACnet: Real	-14.98-185°F	NA
		LONWORKS: Fixed Point Scalar signed long	-26.1-85°C	

BACnet

Evaporator #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	68	Present Value	85
Object Name				
C1EvapSatRefTemp				

Evaporator #2

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	69	Present Value	85
Object Name				
C2EvapSatRefTemp				

Evaporator #3

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	70	Present Value	85
Object Name				
C3EvapSatRefTemp				

Evaporator #4

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	71	Present Value	85
Object Name				
C4EvapSatRefTemp				

LonWorks

LonWorks Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoEvapSatRefTmp	McQuay_Chiller	SNVT_temp_p	30	two bytes

EXV Controller Communication Failed - Circuit #n

Keypad Menu Path No keypad equivalent.

This commandable BACnet object is used to generate the EXV Controller Communication Failed - Circuit #n alarm. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Usable Range	Default Value
NA	NA	Integer	Enumerated	N/A

BACnet

Circuit #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Value	5	13	Present Value	85
Object Name				
EXVCntrlr1CommFail				

Property Values
0=NoAlarm
1=InAlarm

Circuit #2

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Value	5	14	Present Value	85
Object Name				
EXVCntrlr2CommFail				

Property Values
0=NoAlarm
1=InAlarm

Circuit #3

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Value	5	15	Present Value	85
Object Name				
EXVCntrlr3CommFail				

Property Values
0=NoAlarm
1=InAlarm

Circuit #4

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Value	5	16	Present Value	85
Object Name				
EXVCntrlr4CommFail				

Property Values
0=NoAlarm
1=InAlarm

Fan Controller Communication Failed

Keypad Menu Path No keypad equivalent.

This commandable BACnet object is used to generate the Fan Controller Communication Failed alarm. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Usable Range	Default Value
NA	NA	Integer	Enumerated	N/A

BACnet

Circuit #1 & Circuit #2

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Value	5	18	Present Value	85
Object Name				
FanCrtlr1and2ComFail				

Property Values
0=NoAlarm 1=InAlarm

Circuit #3

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Value	5	19	Present Value	85
Object Name				
FanCrtlr3ComFail				

Property Values
0=NoAlarm 1=InAlarm

Circuit #4

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Value	5	20	Present Value	85
Object Name				
FanCrtlr4ComFail				

Property Values
0=NoAlarm 1=InAlarm

Circuit #3 & Circuit #4

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Value	5	21	Present Value	85
Object Name				
FanCrtlr3and4ComFail				

Property Values
0=NoAlarm 1=InAlarm

Ice Setpoint - Network

Keypad Menu Path Main Menu_View/Set Unit_Status/Settings_Netwrk Ice SP=

This read/write input network parameter 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 default is 25°F. 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.

Measurement	Units	Data Type	Usable Range	Default Value
Temperature	°F/°C	BACnet: Real LONWORKS: Fixed Point Scalar signed long	15.08° to 38.12°F -9.4° to 3.4°C	24.98°F (-3.9°C)

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Value	2	7	Present Value	85
Object Name				
NetworkIceTempSetpoint				

Note: If the BACnet communication module is attached to a unit controller that also has a LONWORKS and/or Modbus communication module attached, BACnet must write at priority 8 or higher. LONWORKS and Modbus write to this point at priority 8.

LonWorks

This input network variable provides the Ice setpoint of the Leaving Chilled Fluid when the chiller is operating in the Ice Mode.

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
NviIceSpt	McQuay_Chiller	temp_p	105	two bytes

Ice Setpoint (LONWORKS)

Keypad Menu Path No Keypad Equivalent

This optional network parameter establishes the default Setpoint for the Leaving Fluid Temperature when it is in the ice mode, unless the configuration parameter nciDefaults =1 (see Default Values). If nciDefaults = 1, the last valid value is used. Refer to the appropriate Operating Manual for suitable variable values.

Measurement	Units	Data Type	Usable Range	Default Value
Temperature	°F/°C	Fixed Point Scalar signed long	-9.4 to 3.4°C	-3.9°C

LonWorks

The Ice Setpoint - Network variable (nviIceSpt) is set to this configuration value (nciIceSetpt) on power-up or loss of communication unless the configuration parameter 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 communications is determied by Receive Heartbeat (nciRCvHrtBt). If Receive Heartbeat is greater than zero, then communications is considered lost of 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.

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size	SCPT_Reference	SCPT Index
nciIceSetpt	Chiller	temp_p	105	two bytes	UCPT_IceSetpoint	

Maximum Send Time (LONWORKS)

Keypad Menu Path Main Menu_View/Set Unit_LON Setup_Max Send Time=

This configuration network parameter controls the maximum period of time that expires before the following network variables are transmitted:

- nvoChillerStat
- nvoActiveSetpt
- nvoActCapacity
- nvoLvgChWTemp
- nvoEntChWTemp

Measurement	Units	Data Type	Usable Range	Default Value
Elapsed Time	seconds	Fixed Point Scalar - unsigned long	0–6553.4 sec	0 (no automatic update)

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size	SCPT_Reference	SCPT Index
nciMaxSendTime	Chiller	time_sec	107	two bytes	SCPT_maxSendTime	49

Minimum Send Time (LONWORKS)

Keypad Menu Path Main Menu_View/Set Unit_LON Setup_Min Send Time=

This configuration network parameter 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

Measurement	Units	Data Type	Usable Range	Default Value
Elapsed Time	seconds	Fixed Point Scalar - unsigned long	0–6553.4 sec	10 seconds

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size	SCPT_Reference	SCPT Index
nciMinSendTime	Chiller	time_sec	107	two bytes	SCPT_minSendTime	52

Oil Feed Pressure

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates the current Oil Feed Pressure. There is one BACnet object for each compressor. These objects are used for Intrinsic Alarming and generate the COMPRESSOR SHUTDOWN - Oil Feed Pressure Sensor Fault Circuit #n Comp #n alarms. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it will interfere with this function.

Measurement	Units	Data Type	Usable Range	Default Value
Pressure (gauge)	Psi or kPa	BACnet: Real	-5.801473 to 17.54946 psi -40 to 121kPA	NA

BACnet

Circuit #1 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	165	Present Value	85
Object Name				
C1Comp1OilFeedPress				

Circuit #2 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	166	Present Value	85
Object Name				
C2Comp1OilFeedPress				

Circuit #3 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	167	Present Value	85
Object Name				
C3Comp1OilFeedPress				

Circuit #4 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	168	Present Value	85
Object Name				
C4Comp1OilFeedPress				

LonWorks

No LONWORKS equivalent.

Outdoor Air Temperature

Keypad Menu Path Main Menu_View/Set Unit_Temperatures_Outside Air=

This read-only network parameter indicates 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 notificaiton class object. Analog Input 5 is mapped to Notification Class 1 (Faults) and Analog Input 149 is mapped to Notification Class 2 (Problems).

Measurement	Units	Data Type	Usable Range	Default Value
Temperature	°F/°C	BACnet: Real LONWORKS: Fixed Point Scalar signed long	-40°–230°F -40°– 110°C	NA

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	5	Present Value	85
Object Name				
OutdoorAirTemp				

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	149	Present Value	85
Object Name				
OutdoorAirTempLow				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoOutdoorTemp	McQuay_Chiller	temp_p	105	two bytes

Pump Select

Keypad Menu Path No Keypad Equivalent

This input network variable selects which pump (#1 or #2) supplies the data. The unit controller returns the information from the appropriate condenser or evaporator pump. First, select a pump and then interrogate the selected pump. See Condenser Pump Run Hours and Evaporator Pump Run Hours sections for additional information.

Measurement	Units	Data Type	Usable Range	Default Value
Event Count	NA	LONWORKS: structure	See Below	Pump No. 1

BACnet

No BACnet equivalent.

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nviPumpSelect	McQuay_Chiller	Switch	95	two bytes

Valid Range

Value Field	State Field	Description
Unused	0	Pump No. 1
Unused	1	Pump No. 2

Receive Heartbeat

Keypad Menu Path Main Menu_View/Set Unit_LON Setup_Rcv Heartbeat=

This read/write configuration property 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 cooresponding 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.

Measurement	Units	Data Type	Valid Range	Default Value
Time	Seconds	LonWorks: Unsigned Long	0.0–6553.4 sec	0 seconds

The only variables that use Receive Heartbeat are:

- nviCapacityLim
- nviChillerEnable
- nviCoolSetpt
- nviIceSpt
- nviMode

BACnet

No BACnet equivalent

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SCPT Reference	SCPT Index
nciRCvHrtBt	Chiller	SNVT_time_sec	107	SCPTmaxRcvTime	48

Request

Keypad Menu Path No Keypad Equivalent

This input network variable 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.

The following functions are supported:

- **RQ_NORMAL** - If the specified functional block was in the disabled or overridden state, this request cancels that state, and returns the functional block to normal operation. If the functional block was already in the normal state, a request to enter the normal state is not an error. After device reset, the state of functional blocks on the device is application-specific. An **RQ_NORMAL** request that specifies the Node Object functional block index is a request for all functional blocks in the device to leave the disabled and overridden states.
- **RQ_UPDATE_STATUS -** Requests the status of the specified functional block to be sent to the **nvoStatus** output network variable. The state of the functional block is unchanged. An **RQ_ UPDATE_STATUS** request that specifies the Node Object functional block is a request for the status of the device and all functional blocks on the device. The status bits of the Node Object (with the exception of **invalid_request** and **invalid_id**) are defined to be the inclusive-OR of the status bits of all the other functional blocks in the device; with the possible addition of error conditions and other conditions attributed to the device as a whole, rather than to any individual functional block. For example, if **comm_failure** is supported for the Node Object, then it should be set when reporting the Node Object functional block status whenever any of the functional blocks in the device reports communications failure, as well as when there is a communications failure at the device level.
- **RQ_REPORT_MASK -** Requests a *status mask* reporting the status bits that are supported by the specified functional block to be sent to the **nvoStatus** output network variable. A one bit in the status mask means that the device may set the corresponding bit in the object status when the condition defined for that bit occurs. A zero bit in the status mask means that the bit is never set by the device.

Measurement	Units	Data Type	Valid Range	Default Value
Object Request	N/A	Structure	N/A	N/A

BACnet

No BACnet equivalent

LonWorks

LonWorks Name	Profile	SNVT Type	SNVT Number
nviRequest	Node Object	SNVT_obj_status	93

Enumeration Definitions (object_request_t)

Value	Identifier	Notes
0	RQ_NORMAL	Enable object and remove override
1	RQ_DISABLED	Disable object (not supported)
2	RQ_UPDATE_STATUS	Report object status
3	RQ_SELF_TEST	Perform object self-test (not supported)
4	RQ_UPDATE_ALARM	Update alarm status (not supported)

Value	Identifier	Notes
5	RQ_REPORT_MASK	Report status bit mask
6	RQ_OVERRIDE	Override object (not supported)
7	RQ_ENABLE	Enable object (not supported)
8	RQ_RMV_OVERRIDE	Remove object override (not supported)
9	RQ_CLEAR_STATUS	Clear object status (not supported)
10	RQ_CLEAR_ALARM	Clear object alarm (not supported)
11	RQ_ALARM_NOTIFY_ENABLED	Enable alarm notification (not supported)
12	RQ_ALARM_NOTIFY_DISABLED	Disable alarm notification (not supported)
13	RQ_MANUAL_CTRL	Enable object for manual control (not supported)
14	RQ_REMOTE_CTRL	Enable object for remote control (not supported)
15	RQ_PROGRAM	Enable programming of special configuration properties (not supported)
16	RQ_CLEAR_RESET	Clear reset-complete flag (reset_complete) (not supported)
17	RQ_RESET	Execute reset-sequence of object (not supported)
-1(0xFF)	OC_NUL	Invalid Value

Run Enabled

Keypad Menu Path No Keypad Equivalent

This read only output network variable indicates the running mode of the chiller. The Run Enabled output network variable indicates that the chiller can start if operating conditions are met.

Measurement	Units	Data Type	Usable Range	Default Value
Chiller Status	NA	BACnet: Enumerated LONWORKS: Structure	See Below	NA

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Input	3	5	Present Value	85
Object Name				
RunEnabled				

Property Values
0 = Off (Inactive)
1 = Run Allowed (Active)

LonWorks

The LONWORKS equivalent of this data point is part of the Chiller Status output network variable.

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoChillerStat	Chiller	chlr_status	127	3 bytes

Property Values (run_enabled)
0 = Off (Inactive)
1 = Run Allowed (Active)

Structure

```
typedef struct {
      chiller_t     chlr_run_mode;
      hvac_t   chlr_op_mode;
      struct{
            unsigned   in_alarm :1;          // offset 0
            unsigned   run_enabled :1;       // offset 1
            unsigned   local :1;             // offset 2
            unsigned   limited :1;           // offset 3
            unsigned   chw_flow :1;          // offset 4
            unsigned   condw_flow :1;        // offset 5
      /* The last two bits (offset 6) are not defined */
      } chlr_state;
} SNVT_chlr_status;
```

Software Identification (Major Version)

Keypad Menu Path No Keypad Equivalent

This property displays the major revision number for the chiller LONWORKS communication module firmware.

Measurement	Units	Data Type	Usable Range	Default Value
Version Number	NA	Structure	0-255	1

LonWorks

LonWorks Name	Profile	SCPT Reference	SCPT Number	SCPT Size
nciDevMajVer	Node Object	SCPTdevMajVer	165	1 byte

Software Identification (Minor Version)

Keypad Menu Path No Keypad Equivalent

This configuration property displays the minor revision number for the chiller LONWORKS communication module firmware.

Measurement	Units	Data Type	Usable Range	Default Value
Version Number	NA	Structure	0-255	0

LonWorks

LonWorks Name	Profile	SCPT Reference	SCPT Number	SCPT Size
nciDevMinVer	Node Object	SCPTdevMinVer	166	1 byte

Status

Keypad Menu Path No Keypad Equivalent

This output network variable 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.

- **invalid_request -** Set to one if an unsupported request code is received on the **nviRequest** input network variable.
- **invalid_id -** Set to one if a request is received for a functional block index that is not defined in the device. No further checking of the request code is required when set to one.
- **report_mask -** Set to one if an **RQ_REPORT_MASK** request is received by the **nviRequest** input network variable, and the **nvoStatus** output network variable is set to contain the status mask. The *status mask* is an **nvoStatus** value that describes the status bits that are supported beyond the three mandatory status bits. The status mask consists of all fields in the **nvoStatus** output network variable, with the exception of the **report_mask**, **invalid_id**, and **invalid_request** fields. A one bit in the mask means that the functional block may set the corresponding bit in the **nvoStatus** output network variable when the condition defined for that bit occurs. A zero bit means that the functional block may never set the bit.

Measurement	Units	Data Type	Valid Range	Default Value
Object Status	N/A	Structure	N/A	N/A

BACnet

No BACnet equivalent

LonWorks

LonWorks Name	Profile	SNVT Type	SNVT Number
nvoStatus	Node Object	SNVT_obj_request	92

Field Definitions

Field	Units	Valid Range	Notes
object_id	unsigned long	0 to 65,535	2 bytes
invalid_id	unsigned	0, 1	1 bit (offset 0)
invalid_request	unsigned	0, 1	1 bit (offset 1)
Disabled	unsigned	0, 1	1 bit (offset 2) - Not Used
out_of_limits	unsigned	0, 1	1 bit (offset 3) - Not Used
open_circuit	unsigned	0, 1	1 bit (offset 4) - Not Used
out_of_service	unsigned	0, 1	1 bit (offset 5) - Not Used
mechanical_fault	unsigned	0, 1	1 bit (offset 6) - Not Used
feedback_failure	unsigned	0, 1	1 bit (offset 7) - Not Used
over_range	unsigned	0, 1	1 bit (offset 0) - Not Used
under_range	unsigned	0, 1	1 bit (offset 1) - Not Used
electrical_fault	unsigned	0, 1	1 bit (offset 2) - Not Used
unable_to_measure	unsigned	0, 1	1 bit (offset 3) - Not Used
comm_failure	unsigned	0, 1	1 bit (offset 4) - Not Used
fail_self_test	unsigned	0, 1	1 bit (offset 5) - Not Used
Self_test_in_progress	unsigned	0, 1	1 bit (offset 6) - Not Used
locked_out	unsigned	0, 1	1 bit (offset 7) - Not Used
manual_control	unsigned	0, 1	1 bit (offset 0) - Not Used
in_alarm	unsigned	0, 1	1 bit (offset 1) - Not Used
in_override	unsigned	0, 1	1 bit (offset 2) - Not Used
report_mask	unsigned	0, 1	1 bit (offset 3)
programming_mode	unsigned	0, 1	1 bit (offset 4) - Not Used
programming_fail	unsigned	0, 1	1 bit (offset 5) - Not Used
Alarm_notify_disabled	unsigned	0, 1	1 bit (offset 6) - Not Used
reset_complete	unsigned	0, 1	1 bit (offset 7) - Not Used
reserved2	unsigned	0 to 0	8 bits (offset 0) - Not Used

Units

Keypad Menu Path Main Menu_View/Set Unit_BACnet MSTP Setup_Unit Support= OR
Main Menu_View/Set Unit_BACnet IP Setup_Unit Support=

This is a BACnet-only variable that 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.

Measurement	Units	Data Type	Valid Range	Default Value
Unit Support	N/A	BACnet: Unsigned	1 = Metric 2 = English	English (2)

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Multistate Value	19	4	Present_Value	85
Object Name				
Units				

Enumeration
1 = Metric 2 = English

VFD Temp

Keypad Menu Path No Keypad Equivalent

This read only network parameter indicates the temperature of the compressor VFD heatsink. There is one parameter for each compressor. These points are used for intrinsic alarming, are only available via BACnet, and only apply to units configured for a VFD.

Measurement	Units	Data Type	Usable Range	Default Value
Temperature	°F / °C	BACnet: Real	14.0°F-302°F -10.0°C-150.0°C	NA

BACnet

Circuit #1 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	178	Present Value	85
Object Name				
C1Co1VfdTemp				

Circuit #2 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	179	Present Value	85
Object Name				
C2Co1VfdTemp				

Circuit #3 Compressor #1

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Analog Input	0	180	Present Value	85
Object Name				
C3Co1VfdTemp				

LonWorks

No LONWORKS equivalent.

Alarms

There are two methods of obtaining alarm information via the MicroTech III Chiller Unit Controller:

1. By monitoring individual alarms
2. By monitoring alarms according to alarm class

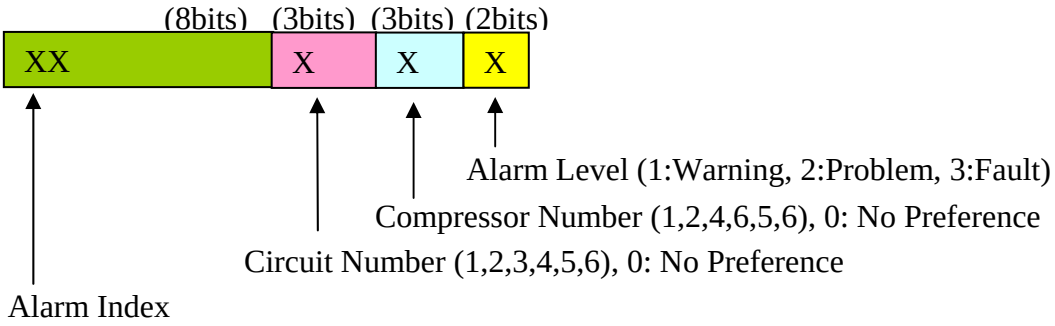
Alarms in the unit controller are divided into three classes: Faults, Problems, and Warnings. Fault alarms have the highest priority. Problem alarms have the next priority. Warning alarms have the lowest priority. The alarms within each class are not prioritized in any way. Refer to the MicroTech III Chiller Controller Operation Manual for a description of each alarm. The unit controller has various ways of managing alarms, depending on the protocol. Using one of these mechanisms, alarms can be recognized and acknowledged by alarm class or individually, and cleared from the network.

Alarm Monitoring

The 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.

Alarm Code

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 maintence warning. However, by monitoring the alarm code, it is possible to view which compressor needs maintenance. The Alarm Index is used in calculateing the alarm code in the following manner:



BACnet

The unit controller may have alarms monitored by one of four methods: 1) individually by BACnet Binary Value Objects, 2) using a BACnet Binary Output, 3) alarm class or 4) Notification Classes.

1. 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.
2. 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.
3. 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 is calculated as shown in the diagram above.
4. To monitor alarms using Intrinsic Alarming, see the Alarm Notification section.

LonWorks

The unit controller may have alarms monitored by one of three methods: 1) alarm class, 2) reading In_alarm, or 3) reading alarm descriptor.

1. 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.
2. 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.

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

Alarm Notification/Intrinsic Reporting

The 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. 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 McQuay 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. 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. Tables 9-11 define the objects and their corresonding notification classes supported by Intrinsic Reporting:

Table 10. Warning Alarms Supported by Intrinsic Reporting

Notification Class 3 (Warnings)					
Alarm	**Object Type**	**Object Instance**	**Event_Enable (Default)**		
			To-OffNormal	**To-Fault**	**To-Normal**
Evaporator Entering Water Temperature Sensor Warning	AI	1		X	X
Bad Setpoint Override Input	BV	512	X		X
Bad Demand Limit Input	BV	513	X		X
Unit Power Restore[1]	BV	515	X		X
Circuit 1 Failed Pumpdown	BV	516	X		X
Circuit 2 Failed Pumpdown	BV	517	X		X
Circuit 3 Failed Pumpdown	BV	518	X		X
Circuit 4 Failed Pumpdown	BV	519	X		X
External Event	BV	924	X		X
Bad Current Limit Input	BV	918	X		X
Option Controller Communication Failed	BV	919	X		X

[1] This object is only available for intrinsic alarming in AWS application 2507500204 or earlier.

Table 11. Problem Alarms Supported by Intrinsic Reporting

Notification Class 2 (Problems)					
Alarm	**Objec t Type**	**Object Instance**	**Event_Enable (Default)**		
			To-OffNormal	**To-Fault**	**To-Normal**
Power Loss While Running #1	BV	529	X		X
Power Loss While Running #2	BV	530	X		X
Power Loss While Running #3	BV	531	X		X
Power Loss While Running #4	BV	532	X		X
PUMP #2 START ATTEMPTED - Evaporator Pump #1 Failure	BV	575	X		X
PUMP #1 START ATTEMPTED - Evaporator Pump #2 Failure	BV	576	X		X
START INHIBITED - Ambient Temperature Low	AI	149	X		X
INHIBIT LOAD – Condenser Pressure High #1[1]	AI	157	X		X
INHIBIT LOAD – Condenser Pressure High #2[1]	AI	158	X		X
INHIBIT LOAD – Condenser Pressure High #3[1]	AI	159	X		X
INHIBIT LOAD – Condenser Pressure High #4[1]	AI	160	X		X
UNLOAD – Condenser Pressure High #1[1]	AI	161	X		X
UNLOAD – Condenser Pressure High #2[1]	AI	162	X		X
UNLOAD – Condenser Pressure High #3[1]	AI	163	X		X
UNLOAD – Condenser Pressure High #4[1]	AI	164	X		X
INHIBIT LOAD - Evaporator Pressure Low #1[1]	AI	173	X		X
INHIBIT LOAD - Evaporator Pressure Low #2[1]	AI	174	X		X
INHIBIT LOAD - Evaporator Pressure Low #3[1]	AI	175	X		X
INHIBIT LOAD - Evaporator Pressure Low #4[1]	AI	176	X		X
UNLOAD - Evaporator Pressure Low #1[1]	AI	153	X		X
UNLOAD - Evaporator Pressure Low #2[1]	AI	154	X		X
UNLOAD - Evaporator Pressure Low #3[1]	AI	155	X		X
UNLOAD - Evaporator Pressure Low #4[1]	AI	156	X		X

UNLOAD - Compressor Motor Current High Circuit #1 Comp #1[1]	AI	181	X		X
UNLOAD - Compressor Motor Current High Circuit #2 Comp #1[1]	AI	182	X		X
UNLOAD - Compressor Motor Current High Circuit #3 Comp #1[1]	AI	183	X		X
INHIBIT LOAD - Compressor Motor Current High Circuit #1 Comp #1[1]	AI	184	X		X
INHIBIT LOAD - Compressor Motor Current High Circuit #2 Comp #1[1]	AI	185	X		X
INHIBIT LOAD - Compressor Motor Current High Circuit #3 Comp #1[1]	AI	186	X		X

[1] This object is only available for intrinsic alarming in AWS application version 2507500204 or earlier.

Table 12. Fault Alarms Supported by Intrinsic Reporting

Notification Class 1 (Faults)					
Alarm	**Object Type**	**Object Instance**	**Event_Enable (Default)**		
			To-OffNormal	**To-Fault**	**To-Normal**
COMP SHUTDOWN - Low pressure ratio Circuit 1 Comp1	BV	599	X		X
COMP SHUTDOWN - Low pressure ratio Circuit 2 Comp1	BV	601	X		X
COMP SHUTDOWN - Low pressure ratio Circuit 3 Comp1	BV	603	X		X
COMP SHUTDOWN - Low pressure ratio Circuit 4 Comp1	BV	604	X		X
UNIT SHUTDOWN - Outside Air Temperature Sensor Fault	AI	5		X	X
COMP SHUTDOWN - Current Overload Trip Circuit 1 Comp 1	AI	9	X	X	X
COMP SHUTDOWN - Current Overload Trip Circuit 1 Comp 1	AI	12	X	X	X
COMP SHUTDOWN - Current Overload Trip Circuit 1 Comp 1	AI	15	X	X	X
COMP SHUTDOWN– Motor Protector Trip Circuit 1 Comp 1	BV	625	X		X
COMP SHUTDOWN– Motor Protector Trip Circuit 2 Comp 1	BV	627	X		X
CIRCUIT SHUTDOWN – Low Evaporator Pressure Trip Circuit 1 Fault	AI	141	X	X	X
CIRCUIT SHUTDOWN – Low Evaporator Pressure Trip Circuit 2 Fault	AI	142	X	X	X
CIRCUIT SHUTDOWN – Condenser Pressure High Trip Circuit 1 Fault	AI	99	X	X	X
CIRCUIT SHUTDOWN – Condenser Pressure High Trip Circuit 2 Fault	AI	100	X	X	X
CIRCUIT SHUTDOWN – Evaporator Pressure Sensor Circuit 1 Fault	AI	141	X	X	X
CIRCUIT SHUTDOWN – Evaporator Pressure Sensor Circuit 2 Fault	AI	142	X	X	X
CIRCUIT SHUTDOWN – Condensor Pressure Sensor Circuit 1 Fault	AI	99	X	X	X
CIRCUIT SHUTDOWN – Condensor Pressure Sensor Circuit 2 Fault	AI	100	X	X	X
COMP SHUTDOWN–Motor Temperature High Circuit 1 Comp 1	BV	637	X		X
COMP SHUTDOWN–Motor Temperature High Circuit 2 Comp 1	BV	639	X		X
COMP SHUTDOWN–Motor Temperature High Circuit 3 Comp 1	BV	641	X		X
COMP SHUTDOWN–Motor Temperature High Circuit 4 Comp 1	BV	642	X		X
COMP SHUTDOWN–Motor Temp Sensor Fault Circuit 1 Comp 1	BV	899	X		X
COMP SHUTDOWN–Motor Temp Sensor Fault Circuit 2 Comp 1	BV	901	X		X
COMP SHUTDOWN–Motor Temp Sensor Fault Circuit 3 Comp 1	BV	903	X		X
COMP SHUTDOWN–Motor Temp Sensor Fault Circuit 4 Comp 1	BV	904	X		X
COMP SHUTDOWN - Condenser Pressure Sensor Fault Circuit 1 Comp 1	AI	99	X	X	X
COMP SHUTDOWN - Condenser Pressure Sensor Fault Circuit 2 Comp 1	AI	100	X	X	X
COMP SHUTDOWN - Condenser Pressure Sensor Fault Circuit 3 Comp 1	AI	101	X	X	X
COMP SHUTDOWN - Condenser Pressure Sensor Fault Circuit 4 Comp 1	AI	102	X	X	X
COMP SHUTDOWN-Condenser Pressure High Circuit 1 Comp 1	AI	99	X	X	X
COMP SHUTDOWN-Condenser Pressure High Circuit 2 Comp 1	AI	100	X	X	X
COMP SHUTDOWN-Condenser Pressure High Circuit 3 Comp 1	AI	101	X	X	X
COMP SHUTDOWN-Condenser Pressure High Circuit 4 Comp 1	AI	102	X	X	X
COMP SHUTDOWN-Discharge Temperature Sensor Fault Circuit 1 Comp 1	AI	63	X	X	X
COMP SHUTDOWN-Discharge Temperature Sensor Fault Circuit 2 Comp 1	AI	66	X	X	X
COMP SHUTDOWN-Discharge Temperature Sensor Fault Circuit 3 Comp 1	AI	69	X	X	X
COMP SHUTDOWN-Discharge Temperature Sensor Fault Circuit 4 Comp 1	AI	72	X	X	X
COMP SHUTDOWN-Discharge Temp High Circuit 1 Comp 1	AI	63	X	X	X
COMP SHUTDOWN-Discharge Temp High Circuit 2 Comp 1	AI	66	X	X	X
COMP SHUTDOWN-Discharge Temp High Circuit 3 Comp 1	AI	69	X	X	X
COMP SHUTDOWN-Discharge Temp High Circuit 4 Comp 1	AI	72	X	X	X
UNIT SHUTDOWN - Evaporator Water Flow Loss	BV	701	X		X
UNIT SHUTDOWN - Evaporator LWT or EWT Low (Freeze)	BV	702	X		X
COMP SHUTDOWN-Evaporator Pressure Sensor Fault Circuit 1 Comp 1	AI	141	X	X	X
COMP SHUTDOWN-Evaporator Pressure Sensor Fault Circuit 2 Comp 1	AI	142	X	X	X

Notification Class 1 (Faults)					
Alarm	Object Type	Object Instance	Event_Enable (Default)		
			To-OffNormal	To-Fault	To-Normal
COMP SHUTDOWN-Evaporator Pressure Sensor Fault Circuit 3 Comp 1	AI	143	X	X	X
COMP SHUTDOWN-Evaporator Pressure Sensor Fault Circuit 4 Comp 1	AI	144	X	X	X
COMP LOCKOUT-Number of Allowed Re-Starts Exceeded Circuit 1 Comp 1	BV	742	X		X
COMP LOCKOUT-Number of Allowed Re-Starts Exceeded Circuit 2 Comp 1	BV	744	X		X
COMP LOCKOUT-Number of Allowed Re-Starts Exceeded Circuit 3 Comp 1	BV	746	X		X
COMP LOCKOUT-Number of Allowed Re-Starts Exceeded Circuit 4 Comp 1	BV	747	X		X
UNIT SHUTDOWN-Evaporator Leaving Water Temperature Sensor Fault	AI	2		X	X
UNIT SHUTDOWN-Evaporator Entering Water Temperature Sensor Fault	AI	1		X	X
COMP SHUTDOWN - Mechanical High Pressure Trip Circuit 1 Comp 1	BV	760	X		X
COMP SHUTDOWN - Mechanical High Pressure Trip Circuit 2 Comp 1	BV	762	X		X
COMP SHUTDOWN - Mechanical High Pressure Trip Circuit 3 Comp 1	BV	764	X		X
COMP SHUTDOWN - Mechanical High Pressure Trip Circuit 4 Comp 1	BV	765	X		X
COMP SHUTDOWN - Oil Delta Pressure High Circuit 1 Comp 1	BV	796	X		X
COMP SHUTDOWN - Oil Delta Pressure High Circuit 2 Comp 1	BV	798	X		X
COMP SHUTDOWN - Oil Delta Pressure High Circuit 3 Comp 1	BV	800	X		X
COMP SHUTDOWN – Oil Delta Pressure High Circuit 4 Comp 1	BV	801	X		X
COMP SHUTDOWN – Oil Feed Pressure Sensor Fault Circuit 1 Comp 1	AI	165		X	X
COMP SHUTDOWN – Oil Feed Pressure Sensor Fault Circuit 2 Comp 1	AI	166		X	X
COMP SHUTDOWN – Oil Feed Pressure Sensor Fault Circuit 3 Comp 1	AI	167		X	X
COMP SHUTDOWN – Oil Feed Pressure Sensor Fault Circuit 4 Comp 1	AI	168		X	X
SHUTDOWN – Phase Voltage Protection – Unit	BV	820	X		X
SHUTDOWN – Phase Voltage Protection Circuit 1	BV	926	X		X
SHUTDOWN – Phase Voltage Protection Circuit 2	BV	927	X		X
SHUTDOWN – Phase Voltage Protection Circuit 3	BV	928	X		X
SHUTDOWN – Phase Voltage Protection Circuit 4	BV	929	X		X
COMP SHUTDOWN - Starter Fault COMP Circuit 1 Comp 1	BV	821	X		X
COMP SHUTDOWN - Starter Fault COMP Circuit 2 Comp 1	BV	823	X		X
COMP SHUTDOWN - Starter Fault COMP Circuit 3 Comp 1	BV	825	X		X
COMP SHUTDOWN - Starter Fault COMP Circuit 4 Comp 1	BV	826	X		X
COMP SHUTDOWN - Suction Temp Sensor Fault Circuit 1 Comp 1	AI	105		X	X
COMP SHUTDOWN - Suction Temp Sensor Fault Circuit 2 Comp 1	AI	108		X	X
COMP SHUTDOWN - Suction Temp Sensor Fault Circuit 3 Comp 1	AI	111		X	X
COMP SHUTDOWN - Suction Temp Sensor Fault Circuit 4 Comp 1	AI	114		X	X
COMP SHUTDOWN – Mechanical Low Pressure Trip Circuit 1 Comp 1	BV	876	X		X
COMP SHUTDOWN – Mechanical Low Pressure Trip Circuit 2 Comp 1	BV	878	X		X
COMP SHUTDOWN – Mechanical Low Pressure Trip Circuit 3 Comp 1	BV	880	X		X
COMP SHUTDOWN – Mechanical Low Pressure Trip Circuit 4 Comp 1	BV	881	X		X
COMP SHUTDOWN – No Pressure Change After Start Circuit 1	BV	905	X		X
COMP SHUTDOWN – No Pressure Change After Start Circuit 2	BV	906	X		X
COMP SHUTDOWN – No Pressure Change After Start Circuit 3	BV	907	X		X
COMP SHUTDOWN – No Pressure Change After Start Circuit 4	BV	908	X		X
COMP SHUTDOWN – No Pressure at Startup Circuit 1	BV	911	X		X
COMP SHUTDOWN – No Pressure at Startup Circuit 2	BV	912	X		X
COMP SHUTDOWN – No Pressure at Startup Circuit 3	BV	913	X		X
COMP SHUTDOWN – No Pressure at Startup Circuit 4	BV	914	X		X
COMP SHUTDOWN – Slide Position Sensor Circuit 1, Comp 1	BV	930	X		X
COMP SHUTDOWN – Slide Position Sensor Circuit 2, Comp 1	BV	932	X		X
COMP SHUTDOWN – Slide Position Sensor Circuit 3, Comp 1	BV	934	X		X
COMP SHUTDOWN – Slide Position Sensor Circuit 4, Comp 1	BV	935	X		X
UNIT STOP – Emergency Stop Alarm	BV	921	X		X
UNIT STOP – Evaporator Water Temperatures Inverted	BV	922	X		X
UNIT STOP – External Alarm	BV	923	X		X
Evaporator Leaving Water Temperature 1 Sensor Fault	AI	151	X	X	X
Evaporator Leaving Water Temperature 2 Sensor Fault	AI	152	X	X	X
CIRCUIT SHUTDOWN – Evaporator 1 Freeze Protection	AI	151	X	X	X
CIRCUIT SHUTDOWN – Evaporator 2 Freeze Protection	AI	152	X	X	X
COMP SHUTDOWN - COMPRESSOR VFD Fault Circuit 1 Comp 1	BV	886	X		X

Notification Class 1 (Faults)					
Alarm	Object Type	Object Instance	Event_Enable (Default)		
			To-OffNormal	To-Fault	To-Normal
COMP SHUTDOWN - COMPRESSOR VFD Fault Circuit 2 Comp 1	BV	888	X		X
COMP SHUTDOWN - COMPRESSOR VFD Fault Circuit 3 Comp 1	BV	890	X		X
COMP SHUTDOWN-COMPRESSOR VFD Over Heat Fault Circuit 1 Comp 1	AI	178	X	X	X
COMP SHUTDOWN-COMPRESSOR VFD Over Heat Fault Circuit 2 Comp 1	AI	179	X	X	X
COMP SHUTDOWN-COMPRESSOR VFD Over Heat Fault Circuit 3 Comp 1	AI	180	X	X	X
COMP SHUTDOWN-COM ERROR With COMPRESSOR VFD Circuit 1 Comp 1	BV	948	X		X
COMP SHUTDOWN-COM ERROR With COMPRESSOR VFD Circuit 2 Comp 1	BV	950	X		X
COMP SHUTDOWN - COM ERROR With COMPRESSOR VFD Circuit 3 Comp 1	BV	952	X		X
COMP Controller Communication Failed Circuit 1	BV	9	X		X
COMP Controller Communication Failed Circuit 2	BV	10	X		X
COMP Controller Communication Failed Circuit 3	BV	11	X		X
COMP Controller Communication Failed Circuit 4	BV	12	X		X
EXV Controller Communication Failed Circuit 1	BV	13	X		X
EXV Controller Communication Failed Circuit 2	BV	14	X		X
EXV Controller Communication Failed Circuit 3	BV	15	X		X
EXV Controller Communication Failed Circuit 4	BV	16	X		X
Alarm/Limit Controller Communication Failed	BV	17	X		X
Fan Controller Communication Failed Circuit 1 & 2	BV	18	X		X
Fan Controller Communication Failed Circuit 3	BV	19	X		X
Fan Controller Communication Failed Circuit 4	BV	20	X		X
Fan Controller Communication Failed Circuit 3 & 4	BV	21	X		X
COMP SHUTDOWN – Low Pressure Start Fail Circuit 1	AI	169	X		X
COMP SHUTDOWN – Low Pressure Start Fail Circuit 2	AI	170	X		X
COMP SHUTDOWN – Low Pressure Start Fail Circuit 3	AI	171	X		X
COMP SHUTDOWN – Low Pressure Start Fail Circuit 4	AI	172	X		X
COMP SHUTDOWN–Evaporator (or Suction) Pressure Low Circuit 1 Comp 1	AI	141	X	X	X
COMP SHUTDOWN–Evaporator (or Suction) Pressure Low Circuit 2 Comp 1	AI	142	X	X	X
COMP SHUTDOWN–Evaporator (or Suction) Pressure Low Circuit 3 Comp 1	AI	143	X	X	X
COMP SHUTDOWN–Evaporator (or Suction) Pressure Low Circuit 4 Comp 1	AI	144	X	X	X
UNIT STOP - PVM GFP Fault	BV	967	X		X
CIRCUIT SHUTDOWN- PVM GFP Circuit 1 Fault	BV	968	X		X
CIRCUIT SHUTDOWN- PVM GFP Circuit 2 Fault	BV	969	X		X

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 13 and the complete list of alarms is shown in Table 14..

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 MSTP 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 reponds, 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 13. Recipient List Property for Standard Notificaion 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.

Table 14. Alarm Data Points for Chiller Models

Data Point	AWS (Application version 2507500204 or earlier)	AWS (Application version 2507500205 or later)	AGZ-D
Clear Alarm - Network	X	X	X
Notification Class – Faults	X	X	X
Notification Class – Problems	X	X	X
Notification Class – Warnings	X	X	X
Warning Alarm Code	X	X	X
Problem Alarm Code	X	X	X
Fault Alarm Code	X	X	X
Warning Alarm Index	X	X	X
Problem Alarm Index	X	X	X
Fault Alarm Index	X	X	X
Alarm/Limit Controller Communication Failed	X	X	
Ambient Temperature Low Problem	X	X	X
Bad Current Limit Input Warning	X	X	X
Bad Demand Limit Input Warning	X	X	X
Bad Setpoint Override Input Warning	X	X	X
Evaporator Entering Water Temperature Sensor Warning			X
Circuit #n Failed Pumpdown Warning	X	X	X
CIRCUIT SHUTDOWN- Evaporator 1 Freeze Protection Fault	X	X	
CIRCUIT SHUTDOWN- Evaporator 2 Freeze Protection Fault	X	X	
CIRCUIT SHUTDOWN – Low Evaporator Pressure Trip Circuit #n Fault			X
CIRCUIT SHUTDOWN – Condenser Pressure High Trip Circuit #n Fault			X
CIRCUIT SHUTDOWN – Evaporator Pressure Sensor Circuit #n Fault			X
CIRCUIT SHUTDOWN – Condensor Pressure Sensor Circuit #n Fault			X
COMPRESSOR LOCKOUT - Number of Allowed Re-Starts Exceeded Circuit #n Compressor #n Fault	X	X	X
COMPRESSOR SHUTDOWN - COM ERROR with COMPRESSOR VFD Circuit #n Comp #n	X[1]	X[1]	
COMPRESSOR SHUTDOWN - COMPRESSOR VFD Fault Circuit #n Comp #n	X[1]	X[1]	
COMPRESSOR SHUTDOWN - COMPRESSOR VFD Over Heat #n Fault	X[1]	X[1]	
COMPRESSOR SHUTDOWN - Condenser Pressure High Circuit #n Compressor #n Fault	X	X	X
COMPRESSOR SHUTDOWN - Condenser Pressure Sensor Circuit #n Compressor #n Fault	X	X	X
COMPRESSOR SHUTDOWN - Current Overload Trip #n Fault	X	X	X
COMPRESSOR SHUTDOWN - Discharge Temperature Sensor Circuit #n Compressor #n Fault	X	X	
COMPRESSOR SHUTDOWN - Discharge Temperature High Circuit #n Compressor #n Fault	X	X	
COMPRESSOR SHUTDOWN - Evaporator Leaving Water Temperature Low (Freeze) Fault	X	X	X
COMPRESSOR SHUTDOWN - Evaporator Pressure Low Circuit #n Compressor #n Fault	X	X	X
COMPRESSOR SHUTDOWN - Evaporator Pressure Sensor Circuit #n Compressor	X	X	X

Data Point	AWS (Application version 2507500204 or earlier)	AWS (Application version 2507500205 or later)	AGZ-D
#n Fault			
COMPRESSOR SHUTDOWN – Low Discharge Superheat Circuit #n Compressor #n Fault	X	X	
COMPRESSOR SHUTDOWN – Low Pressure Ratio #n Fault	X	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
COMPRESSOR SHUTDOWN – Motor Protector Trip Circuit #n Compressor #n			X
COMPRESSOR SHUTDOWN – Motor Temp Sensor Circuit #n Compressor #n	X	X	
COMPRESSOR SHUTDOWN - Motor Temperature High Circuit #n Compressor #n Fault	X	X	
COMPRESSOR SHUTDOWN - No Pressure Change After Start Circuit #n	X	X	X
COMPRESSOR SHUTDOWN - No Pressure at Startup Circuit #n	X	X	
COMPRESSOR SHUTDOWN - Oil Delta Pressure High Circuit #n Compressor #n Fault	X	X	
COMPRESSOR SHUTDOWN - Oil Feed Pressure Sensor Circuit #n Compressor #n Fault	X	X	
COMPRESSOR SHUTDOWN - Outside Air Temperature Sensor Fault	X	X	X
COMPRESSOR SHUTDOWN – Slide Position Sensor #n Fault	X	X	
COMPRESSOR SHUTDOWN – Starter Fault Compressor #n Fault	X	X	
COMPRESSOR SHUTDOWN - Suction Temperature Sensor Circuit #n Compressor #n Fault	X	X	X
Controller Board #n Offline Fault	X	X	
Evaporator Entering Water Temperature Sensor Fault	X	X	
Evaporator Leaving Water Temperature 1 Sensor Fault	X	X	
Evaporator Leaving Water Temperature 2 Sensor Fault	X	X	
External Event	X	X	X
INHIBIT LOAD – Compressor Motor Current High #n Problem	X[1]		
INHIBIT LOAD – Condenser Pressure High Circuit #n Problem	X		
INHIBIT LOAD - Evaporator Pressure Low #n Problem	X		
Option Controller Communication Failed Warning	X	X	
Power Loss While Running Circuit #n Problem	X	X	
PUMP #2 START ATTEMPTED - Evaporator Pump #1 Failure			X
PUMP #1 START ATTEMPTED - Evaporator Pump #2 Failure			X
SHUTDOWN – Phase Voltage Protection Fault	X	X	
UNIT Power Restore Warning	X		
UNIT SHUTDOWN - Evaporator Leaving Water Temperature Sensor Fault	X	X	X
UNIT SHUTDOWN - Evaporator Water Flow Loss Fault	X	X	X
UNIT STOP - Emergency Stop Alarm	X	X	
UNIT STOP - Evaporator Water Temperatures Inverted	X	X	
UNIT STOP – External Alarm	X	X	X
UNLOAD – Compressor Motor Current High #n Problem	X[1]		
UNLOAD – Condenser Pressure High #n Problem	X		
UNLOAD - Evaporator Pressure Low #n Problem	X		
UNIT STOP - PVM GFP Fault			X
CIRCUIT SHUTDOWN- PVM GFP Circuit #n Fault			X

[1]Available for AWS with optional VFD only

Alarm Clearing

BACnet

Alarms within the unit controller can be cleared via BACnet by setting the ClearAlarms variable to a value of 1. After the alarms are cleared, this variable will return to Normal (0).

LonWorks

Using nviClearAlarm can clear alarms within the unit controller. To clear alarms, set 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, only those listed below can be cleared from the network:

- UNIT SHUTDOWN - Evaporator Water Flow Loss
- UNIT SHUTDOWN–Evaporator Leaving Water Temp Low (Freeze)
- CIRCUIT SHUTDOWN – Evaporator 1 Freeze Protection
- CIRCUIT SHUTDOWN – Evaporator 2 Freeze Protection

Measurement	Units	Data Type	Usable Range	Default Value
NA	NA	Integer	Enumerated	0=Normal

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Value	5	8	Present Value	85
Object Name				
ClearAlarm				

Property Values
0=Normal
1=Clear Alarms

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nviClearAlarm	McQuay_Chiller	switch	95	two bytes

Valid Range

State	Value	Clear Alarm
0	unused	No Alarm
1	unused	Clear Alarm

Notification Class - Faults

Keypad Menu Path No Keypad Equivalent

These read/write properties allow subsciption 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 the Alarm Notification section for additional information, including a list of objects that report events to this notification class.

Measurement	Units	Data Type	Valid Range	Default Value
Notification	N/A	List of BACnetDestination	N/A	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Notification Class	15	1	recipient_list	102
Object Name				
NC1-Faults[1, 2]				

[1] 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 MSTP 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.

[2] Maximum of 20 recipients at one time.

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Notification Class	15	1	Ack_Required	1
Object Name				
NC1-Faults				

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Notification Class	15	1	Priority	86
Object Name				
NC1-Faults[1]				

[1] A lower number indicates a higher priority.

LonWorks
No LONWORKS equivalent

Notification Class - Problems

Keypad Menu Path No Keypad Equivalent

These read/write properties allow subsciption 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 the Alarm Notification section for additional information, including a list of objects that report events to this notification class.

Measurement	Units	Data Type	Valid Range	Default Value
Notification	N/A	List of BACnetDestination	N/A	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Notification Class	15	2	recipient_list	102
Object Name				
NC1-Problems[1, 2]				

[1] If the BACnet Workstation is unable to subscribe to the recipient_list, you can still subscribe to alarms on the unit controller keypad/display Navigate to the IP Setup or MSTP 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 unit controller keypad/display.

[2] Maximum of 20 recipients at one time.

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Notification Class	15	2	Ack_Required	1
Object Name				
NC1-Problems				

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Notification Class	15	2	Priority	86
Object Name				
NC1-Problems[1]				

[1] A lower number indicates a higher priority.

LonWorks
No LONWORKS equivalent.

Notification Class - Warnings

Keypad Menu Path No Keypad Equivalent

These read/write properties allow subsciption 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 the Alarm Notification section for additional information, including a list of objects that report events to this notification class.

Measurement	Units	Data Type	Valid Range	Default Value
Notification	N/A	List of BACnetDestination	N/A	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Notification Class	15	3	recipient_list	102
Object Name				
NC1-Warnings[1, 2]				

[1] If the BACnet Workstation is unable to subscribe to the recipient_list, you can still subscribe to alarms on the unit controller keypad display. Navigate to the IP Setup or MSTP 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.

[2] Maximum of 20 recipients at one time.

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Notification Class	15	3	Ack_Required	1
Object Name				
NC1-Warnings				

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Notification Class	15	3	Priority	86
Object Name				
NC1-Warnings[1]				

[1] A lower number indicates a higher priority.

LonWorks

No LONWORKS equivalent.

Warning Alarm Code

Keypad Menu Path No Keypad Equivalent

This object allows individual notification of the active warning alarm. The alarms are not ordered based on any priority. If multipe 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.

Measurement	Units	Data Type	Valid Range	Default Value
Alarms	N/A	BACnet: Real LONWORKS: Floating Point	Enumerated	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Analog Value	2	903	Present_Value	85
Object Name				
AVWarningAlarmCode				

Property Value
Refer to the Protocol Point Summary – BACnet table on page 16 for possible values.

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoWarningAlarm	McQuay_Chiller	SNVT_count_f	51	four bytes
Property Value				
Refer to the Protocol Point Summary – BACnet table on page 16 for possible values.				

Problem Alarm Code

Keypad Menu Path No Keypad Equivalent

This object allows individual notification of the active problem alarm. The alarms are not ordered based on any priority. If multipe 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.

Measurement	Units	Data Type	Valid Range	Default Value
Alarms	N/A	BACnet: Real LONWORKS: Floating Point	Enumerated	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Analog Value	2	904	Present_Value	85
Object Name				
AVProblemAlarmCode				
Property Value				
Refer to the Protocol Point Summary – BACnet table on page 16 for possible values.				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoProblemAlarm	McQuay_Chiller	SNVT_count_f	51	four bytes
Property Value				
Refer to the Protocol Point Summary – BACnet table on page 16 for possible values.				

Fault Alarm Code

Keypad Menu Path No Keypad Equivalent

This object allows individual notification of the active fault alarm. The alarms are not ordered based on any priority. If multipe 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.

Measurement	Units	Data Type	Valid Range	Default Value
Alarms	N/A	BACnet: Real LONWORKS: Floating Point	Enumerated	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Analog Value	2	905	Present_Value	85
Object Name				
AVFaultAlarmCode				
Property Value				
Refer to the Protocol Point Summary – BACnet table on page 16 for possible values.				

LonWorks

LONWORKS Name	Profile	SNVT Type	SNVT Index	SNVT Size
nvoFaultAlarm	McQuay_Chiller	SNVT_count_f	51	four bytes
BACnet & LonWorks Property Value				
Refer to the Protocol Point Summary – BACnet table on page 16 for possible values.				

Warning Alarm Index

Keypad Menu Path No Keypad Equivalent

This object allows individual notification of the active warning alarm. The alarms are not ordered based on any priority. If multipe 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.

Measurement	Units	Data Type	Valid Range	Default Value
Alarms	N/A	BACnet: Real LONWORKS: Floating Point	Enumerated	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Analog Value	2	902	Present_Value	85
Object Name				
AVWarningAlarm				
Property Value				
Refer to the Protocol Point Summary – BACnet table on page 16 for possible values.				

LonWorks

No LONWORKS equivalent.

Problem Alarm Index

Keypad Menu Path No Keypad Equivalent

This object allows individual notification of the active problem alarm. The alarms are not ordered based on any priority. If multipe 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.

Measurement	Units	Data Type	Valid Range	Default Value
Alarms	N/A	BACnet: Real LONWORKS: Floating Point	Enumerated	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Analog Value	2	900	Present_Value	85
Object Name				
AVProblemAlarm				
Property Value				
Refer to the Protocol Point Summary – BACnet table on page 16 for possible values.				

LonWorks

No LONWORKS equivalent.

Fault Alarm Index

Keypad Menu Path No Keypad Equivalent

This object allows individual notification of the active fault alarm. The alarms are not ordered based on any priority. If multipe 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.

Measurement	Units	Data Type	Valid Range	Default Value
Alarms	N/A	BACnet: Real	Enumerated	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Analog Value	2	901	Present_Value	85
Object Name				
AVFaultAlarm				
Property Value				
Refer to the Protocol Point Summary – BACnet table on page 16 for possible values.				

LonWorks

No LONWORKS equivalent.

Alarm/Limit Controller Communication Failed

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object is setup to generate Alarm/Limit Controller Communication Failed alarm. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it will interfere with this function.

Measurement	Units	Data Type	Usable Range	Default Value
NA	NA	Binary	Enumerated	N/A

BACnet

Object Identifier			Property Identifier	
Object Type	**Type Enumeration**	**Instance**	**Property Name**	**Property Enumeration**
Binary Value	5	17	Present Value	85
Object Name				
AlarmLimitCtrlrCommFail				
Property Values				
0=NoAlarm 1=InAlarm				

Ambient Temperature Low Problem

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the START INHIBITED - Ambient Temperature Low Problem is active (1) or not (0).

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	533	Present_Value	85
Object Name				
StartInhbtAmbTempLow				
Enumeration				
0=NoAlarm 1=InAlarm				

LonWorks

No LONWORKS equivalent.

Bad Current Limit Input Warning

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the Bad Current Limit Input Warning is active (1) or not active (0). The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	918	Present_Value	85
Object Name				
BadCurrentLimitInput				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

Bad Demand Limit Input Warning

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the Bad Demand Limit Input alarm is active (1) or not active (0). The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	513	Present_Value	85
Object Name				
BadDemandLimitInput				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

Bad Setpoint Override Input Warning

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the Bad Setpoint Override Input alarm is active (1) or not active (0). The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	512	Present_Value	85
Object Name				
BadSPointOverrideInput				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

Circuit #n Failed Pumpdown Warning

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the Circuit #n Failed Pumpdown Warning is active (1) or not active (0). There is one BACnet object for each circuit. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it will interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	516	Present_Value	85
Object Name				
C1FailedPumpdown				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	517	Present_Value	85
Object Name				
C2FailedPumpdown				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #3

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	518	Present_Value	85
Object Name				
C3FailedPumpdown				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #4

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	519	Present_Value	85
Object Name				
C4FailedPumpdown				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

Evaporator Entering Water Temperature Sensor Warning

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the Evaporator Entering Water Temperature Sensor Warning alarm is active (1) or not active (0).

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	501	Present_Value	85
Object Name				
EvapEntWTempSensorFail				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

CIRCUIT SHUTDOWN- Evaporator 1 Freeze Protection Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the CIRCUIT SHUTDOWN- Evaporator 1 Freeze Protection Fault alarm is active (1) or not active (0).

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	751	Present_Value	85
Object Name				
Evap1FreezeProtect				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

CIRCUIT SHUTDOWN- Evaporator 2 Freeze Protection Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the CIRCUIT SHUTDOWN- Evaporator 2 Freeze Protection Fault alarm is active (1) or not active (0).

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	752	Present_Value	85
Object Name				
Evap2FreezeProtect				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR LOCKOUT - Number of Allowed Re-Starts Exceeded Circuit #n Compressor #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the COMPRESSOR LOCKOUT - Number of Allowed Re-Starts Exceeded Circuit #n Compressor #n Fault is active (1) or not active (0). There is one BACnet object for each circuit/compressor combination. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	742	Present_Value	85
Object Name				
C1Comp1OFFNbrRestarts				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	744	Present_Value	85
Object Name				
C2Comp1OFFNbrRestarts				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	746	Present_Value	85
Object Name				
C3Comp1OFFNbrRestarts				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #4, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	747	Present_Value	85
Object Name				
C4Comp1OFFNbrRestarts				

Enumeration
0=NoAlarm 1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN - COM ERROR with COMPRESSOR VFD Circuit #n Comp #n

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the COMPRESSOR SHUTDOWN - COM ERROR With COMPRESSOR VFD Circuit #n Comp #n Fault is active (1) or not active (0). There is one BACnet object for each circuit/compressor combination.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	948	Present_Value	85
Object Name				
C1Cmp1OffVfdCommFail				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	950	Present_Value	85
Object Name				
C2Cmp1OffVfdCommFail				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	952	Present_Value	85
Object Name				
C3Cmp1OffVfdCommFail				
Enumeration				
0=NoAlarm 1=InAlarm				

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN - COMPRESSOR VFD Fault Circuit #n Comp #n

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the COMPRESSOR SHUTDOWN - COMPRESSOR VFD Fault Circuit #n Comp #n Fault is active (1) or not active (0). There is one BACnet object for each circuit/compressor combination.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	886	Present_Value	85
Object Name				
C1Cmp1OffVfdFault				
Enumeration				
0=NoAlarm 1=InAlarm				

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	888	Present_Value	85
Object Name				
C2Cmp1OffVfdFault				
Enumeration				
0=NoAlarm 1=InAlarm				

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	890	Present_Value	85
Object Name				
C3Cmp1OffVfdFault				
Enumeration				
0=NoAlarm 1=InAlarm				

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN - COMPRESSOR VFD Over Heat #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the COMPRESSOR SHUTDOWN COMPRESSOR VFD Over Heat #n Fault is active (1) or not active (0). There is one BACnet object for each circuit/compressor combination.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	942	Present_Value	85
Object Name				
C1Cmp1OffVfdTempHi				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	944	Present_Value	85
Object Name				
C2Cmp1OffVfdTempHi				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	946	Present_Value	85
Object Name				
C3Cmp1OffVfdTempHi				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN - Condenser Pressure High Circuit #n Compressor #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the COMPRESSOR SHUTDOWN - Condenser Pressure High Circuit #n Compressor #n Fault is active (1) or not active (0). There is one BACnet object for each circuit/compressor combination.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	676	Present_Value	85
Object Name				
C1Comp1OFFCondPressHi				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	678	Present_Value	85
Object Name				
C2Comp1OFFCondPressHi				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	680	Present_Value	85
Object Name				
C3Comp1OFFCondPressHi				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #4, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	681	Present_Value	85
Object Name				
C4Comp1OFFCondPressHi				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN - Condenser Pressure Sensor Circuit #n Compressor #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the COMPRESSOR SHUTDOWN - Condenser Pressure Sensor Circuit #n Compressor #n Fault is active (1) or not active (0). There is one BACnet object for each circuit/compressor combination.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	668	Present_Value	85
Object Name				
C1Comp1OFFCondPressSen				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	670	Present_Value	85
Object Name				
C2Comp1OFFCondPressSen				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	672	Present_Value	85
Object Name				
C3Comp1OFFCondPressSen				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #4, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	673	Present_Value	85
Object Name				
C4Comp1OFFCondPressSen				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN - Current Overload Trip #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the COMPRESSOR SHUTDOWN - Current Overload Trip #n Fault is active (1) or not active (0). There is one BACnet object for each circuit/compressor combination.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	606	Present_Value	85
Object Name				
C1Cmp1OffCurrentHi				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	608	Present_Value	85
Object Name				
C2Cmp1OffCurrentHi				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	610	Present_Value	85
Object Name				
C3Cmp1OffCurrentHi				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN - Discharge Temperature Sensor Circuit #n Compressor #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the COMPRESSOR SHUTDOWN - Discharge Temperature Sensor Circuit #n Compressor #n Fault is active (1) or not active (0). There is one BACnet object for each cicruit/compressor combination.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	688	Present_Value	85
Object Name				
C1Comp1OFFDischTempSen				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	690	Present_Value	85
Object Name				
C2Comp1OFFDischTempSen				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	692	Present_Value	85
Object Name				
C3Comp1OFFDischTempSen				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #4, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	693	Present_Value	85
Object Name				
C4Comp1OFFDischTempSen				

Enumeration
0=NoAlarm 1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN - Discharge Temperature High Circuit #n Compressor #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the COMPRESSOR SHUTDOWN - Discharge Temperature High Circuit #n Compressor #n Fault is active (1) or not active (0). There is one BACnet object for each combination of circuits and compressors.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	694	Present_Value	85
Object Name				
C1Comp1OFFDischTempHi				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	696	Present_Value	85
Object Name				
C2Comp1OFFDischTempHi				
Enumeration				
0=NoAlarm 1=InAlarm				

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	698	Present_Value	85
Object Name				
C3Comp1OFFDischTempHi				
Enumeration				
0=NoAlarm 1=InAlarm				

Circuit #4, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	699	Present_Value	85
Object Name				
C4Comp1OFFDischTempHi				
Enumeration				
0=NoAlarm 1=InAlarm				

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN - Evaporator Leaving Water Temperature Low (Freeze) Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the COMPRESSOR SHUTDOWN - Evaporator Leaving Water Temperature Low (Freeze) Fault is active (1) or not active (0). The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	702	Present_Value	85
Object Name				
UnitOFFEvapLvgWTempLo				
Enumeration				
0=NoAlarm 1=InAlarm				

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN - Evaporator Pressure Low Circuit #n Compressor #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the COMPRESSOR SHUTDOWN - Evaporator Pressure Low Circuit #n Compressor #n Fault is active (1) or not active (0). There is one BACnet object for each circuit/compressor combination.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	704	Present_Value	85
Object Name				
C1Comp1OFFEvapPressLow				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	706	Present_Value	85
Object Name				
C2Comp1OFFEvapPressLow				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	708	Present_Value	85
Object Name				
C3Comp1OFFEvapPressLow				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #4, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	709	Present_Value	85
Object Name				
C4Comp1OFFEvapPressLow				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN - Evaporator Pressure Sensor Circuit #n Compressor #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether COMPRESSOR SHUTDOWN - Evaporator Pressure Sensor Circuit #n Compressor #n Fault is active (1) or not active (0). There is one BACnet object for each circuit/compressor combination.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	711	Present_Value	85
Object Name				
C1Comp1OFFEvapPressSen				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	713	Present_Value	85
Object Name				
C2Comp1OFFEvapPressSen				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	715	Present_Value	85
Object Name				
C3Comp1OFFEvapPressSen				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #4, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	716	Present_Value	85
Object Name				
C4Comp1OFFEvapPressSen				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN – Low Discharge Superheat Circuit #n Compressor #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the COMPRESSOR SHUTDOWN – Low Discharge Superheat Circuit #n Compressor #n Fault is active (1) or not active (0). There is one BACnet object for each circuit/compressor combination.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	961	Present_Value	85
Object Name				
C1Co1LowDischSHAlm				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	963	Present_Value	85
Object Name				
C2Co1LowDischSHAlm				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	965	Present_Value	85
Object Name				
C3Co1LowDischSHAlm				

Enumeration
0=NoAlarm 1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN – Low Pressure Ratio #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the COMPRESSOR SHUTDOWN – Low Pressure Ration #n Fault is active (1) or not active (0). There is one BACnet object for each circuit/compressor combination. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	599	Present_Value	85
Object Name				
C1Comp1OFFLoPressRatio				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	601	Present_Value	85
Object Name				
C2Comp1OFFLoPressRatio				
Enumeration				
0=NoAlarm 1=InAlarm				

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	603	Present_Value	85
Object Name				
C3Comp1OFFLoPressRatio				
Enumeration				
0=NoAlarm 1=InAlarm				

Circuit #4, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	604	Present_Value	85
Object Name				
C4Comp1OFFLoPressRatio				
Enumeration				
0=NoAlarm 1=InAlarm				

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN - Mechanical Low Pressure Trip Circuit #n Compressor #n

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the COMPRESSOR SHUTDOWN - Mechanical Low Pressure Trip Circuit #n Compressor #n Fault is active (1) or not active (0). There is one BACnet object for each circuit/compressor combination. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	876	Present_Value	85
Object Name				
C1Comp1OFFMechLoPress				
Enumeration				
0=NoAlarm 1=InAlarm				

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	878	Present_Value	85
Object Name				
C2Comp1OFFMechLoPress				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	880	Present_Value	85
Object Name				
C3Comp1OFFMechLoPress				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #4, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	881	Present_Value	85
Object Name				
C4Comp1OFFMechLoPress				

Enumeration
0=NoAlarm 1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN - Mechanical High Pressure Trip Circuit #n Compressor #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the COMPRESSOR SHUTDOWN - Mechanical High Pressure Trip Circuit #n Compressor #n Fault is active (1) or not active (0). There is one BACnet object for each circuit/compressor combination. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	760	Present_Value	85
Object Name				
C1Comp1OFFHighPress				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	762	Present_Value	85
Object Name				
C2Comp1OFFHighPress				
Enumeration				
0=NoAlarm 1=InAlarm				

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	764	Present_Value	85
Object Name				
C3Comp1OFFHighPress				
Enumeration				
0=NoAlarm 1=InAlarm				

Circuit #4, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	765	Present_Value	85
Object Name				
C4Comp1OFFHighPress				
Enumeration				
0=NoAlarm 1=InAlarm				

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN – Motor Protector Trip Circuit #n Compressor #n

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether COMPRESSOR SHUTDOWN – Motor Protector Trip Circuit #n Compressor #n Fault is active (1) or not active (0). There is one BACnet object for each compressor/circuit combination. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	625	Present_Value	85
Object Name				
C1Cmp1OffMtrProtect				
Enumeration				
0=NoAlarm 1=InAlarm				

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	627	Present_Value	85
Object Name				
C2Cmp1OffMtrProtect				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

CIRCUIT SHUTDOWN – Low Evaporator Pressure Trip Circuit #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether CIRCUIT SHUTDOWN – Low Evaporator Pressure Trip Circuit #n Fault is active (1) or not active (0). There is one BACnet object for each circuit. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	704	Present_Value	85
Object Name				
C1LowEvPr				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	706	Present_Value	85
Object Name				
C2LowEvPr				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

CIRCUIT SHUTDOWN – Condenser Pressure High Trip Circuit #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether CIRCUIT SHUTDOWN – Condenser Pressure High Trip Circuit #n Fault is active (1) or not active (0). There is one BACnet object for each circuit. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1

Object Identifier			Property	
Object Type	Type ID	Instance	Name	ID
Binary Value	5	676	Present_Value	85
Object Name				
C1OFFCondPressHi				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2

Object Identifier			Property	
Object Type	Type ID	Instance	Name	ID
Binary Value	5	678	Present_Value	85
Object Name				
C2OFFCondPressHi				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

CIRCUIT SHUTDOWN – Evaporator Pressure Sensor Circuit #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether CIRCUIT SHUTDOWN – Evaporator Pressure Sensor Circuit #n Fault is active (1) or not active (0). There is one BACnet object for each circuit. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1

Object Identifier			Property	
Object Type	Type ID	Instance	Name	ID
Binary Value	5	711	Present_Value	85
Object Name				
C1EvapPsenf				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	713	Present_Value	85
Object Name				
C2EvapPsenf				

Enumeration
0=NoAlarm 1=InAlarm

LonWorks

No LONWORKS equivalent.

CIRCUIT SHUTDOWN – Condensor Pressure Sensor Circuit #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether CIRCUIT SHUTDOWN – Condensor Pressure Sensor Circuit #n Fault is active (1) or not active (0). There is one BACnet object for each circuit. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	668	Present_Value	85
Object Name				
C1CondPsenf				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #2

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	670	Present_Value	85
Object Name				
C2CondPsenf				

Enumeration
0=NoAlarm 1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN – Motor Temp Sensor Circuit #n Compressor #n

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether COMPRESSOR SHUTDOWN – Motor Temp Sensor Circuit #n Compressor #n Fault is active (1) or not active (0). There is one BACnet object for each compressor/circuit combination. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	899	Present_Value	85
Object Name				
C1Comp1OFFMotorTSens				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	901	Present_Value	85
Object Name				
C2Comp1OFFMotorTSens				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	903	Present_Value	85
Object Name				
C3Comp1OFFMotorTSens				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #4, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	904	Present_Value	85
Object Name				
C4Comp1OFFMotorTSens				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN - Motor Temperature High Circuit #n Compressor #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether COMPRESSOR SHUTDOWN Motor Temperature High Circuit #n Compressor #n Fault is active (1) or not active (0). There is one BACnet object for each compressor/circuit combination. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	637	Present_Value	85
Object Name				
C1Comp1OFFMotorTempHi				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	639	Present_Value	85
Object Name				
C2Comp1OFFMotorTempHi				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	641	Present_Value	85
Object Name				
C3Comp1OFFMotorTempHi				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #4, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	642	Present_Value	85
Object Name				
C4Comp1OFFMotorTempHi				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN - No Pressure Change After Start Circuit #n

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether COMPRESSOR SHUTDOWN - No Pressure Change After Start Circuit #n Fault is active (1) or not active (0). There is one BACnet object for each circuit. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	905	Present_Value	85
Object Name				
C1CompNoPressChStart				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	906	Present_Value	85
Object Name				
C2CompNoPressChStart				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #3

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	907	Present_Value	85
Object Name				
C3CompNoPressChStart				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #4

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	908	Present_Value	85
Object Name				
C4CompNoPressChStart				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN - No Pressure at Startup Circuit #n

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether COMPRESSOR SHUTDOWN - No Pressure at Startup Circuit #n Fault is active (1) or not active (0). There is one BACnet object for each circuit. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	911	Present_Value	85
Object Name				
C1CompNoPressStart				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	912	Present_Value	85
Object Name				
C2CompNoPressStart				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #3

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	913	Present_Value	85
Object Name				
C3CompNoPressStart				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #4

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	914	Present_Value	85
Object Name				
C4CompNoPressStart				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN - Oil Delta Pressure High Circuit #n Compressor #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether COMPRESSOR SHUTDOWN - Oil Delta Pressure High Circuit #n Compressor #n Fault is active (1) or not active (0). There is one BACnet object for each compressor/circuit combination. These objects are used for Intrinsic Alarming. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	796	Present_Value	85
Object Name				
C1Comp1OFFOilFilterPHi				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	798	Present_Value	85
Object Name				
C2Comp1OFFOilFilterPHi				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	800	Present_Value	85
Object Name				
C3Comp1OFFOilFilterPHi				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #4, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	801	Present_Value	85
Object Name				
C4Comp1OFFOilFilterPHi				

Enumeration
0=NoAlarm 1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN - Oil Feed Pressure Sensor Circuit #n Compressor #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether COMPRESSOR SHUTDOWN - Oil Feed Pressure Sensor Circuit #n Compressor #n Fault is active (1) or not active (0). There is one BACnet object for each compressor/circuit combination.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	802	Present_Value	85
Object Name				
C1Comp1OFFOilFeedPSen				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	804	Present_Value	85
Object Name				
C2Comp1OFFOilFeedPSen				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	806	Present_Value	85
Object Name				
C3Comp1OFFOilFeedPSen				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #4, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	807	Present_Value	85
Object Name				
C4Comp1OFFOilFeedPSen				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN - Outside Air Temperature Sensor Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the COMPRESSOR SHUTDOWN - Outside Air Temperature Sensor Fault is active (1) or not active (0).

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	605	Present_Value	85
Object Name				
UnitOFFOATempSenFail				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN – Slide Position Sensor #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the COMPRESSOR SHUTDOWN – Slide Position Sensor #n Fault is active (1) or not active (0). There is one BACnet object for each compressor/circuit combination.

The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it will interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	930	Present_Value	85
Object Name				
C1Comp1SlidePosSenf				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	823	Present_Value	85
Object Name				
C2Comp1SlidePosSenf				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	825	Present_Value	85
Object Name				
C3Comp1SlidePosSenf				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #4, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	826	Present_Value	85
Object Name				
C4Comp1SlidePosSenf				

Enumeration
0=NoAlarm 1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN – Starter Fault Compressor #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the COMPRESSOR SHUTDOWN – Starter Fault Compressor #n Fault is active (1) or not active (0). There is one BACnet object for each compressor/circuit combination. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	821	Present_Value	85
Object Name				
C1Comp1OFFStarterFault				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	823	Present_Value	85
Object Name				
C2Comp1OFFStarterFault				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	825	Present_Value	85
Object Name				
C3Comp1OFFStarterFault				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #4, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	826	Present_Value	85
Object Name				
C4Comp1OFFStarterFault				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

COMPRESSOR SHUTDOWN - Suction Temperature Sensor Circuit #n Compressor #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the COMPRESSOR SHUTDOWN - Suction Temperature Sensor Circuit #n Compressor #n Fault is active (1) or not active (0). There is one BACnet object for each compressor/circuit combination.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	857	Present_Value	85
Object Name				
C1Comp1OFFSuctTempSen				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	859	Present_Value	85
Object Name				
C2Comp1OFFSuctTempSen				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	861	Present_Value	85
Object Name				
C3Comp1OFFSuctTempSen				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #4, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	862	Present_Value	85
Object Name				
C4Comp1OFFSuctTempSen				

Enumeration
0=NoAlarm 1=InAlarm

LonWorks

No LONWORKS equivalent.

Controller Board #n Offline Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the Controller Board #n Offline Fault is active (1) or not active (0). There is one BACnet object for each circuit.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Unit

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	925	Present_Value	85
Object Name				
UnitBoardOffline				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	882	Present_Value	85
Object Name				
C1ControlBoardOffline				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #2

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	883	Present_Value	85
Object Name				
C2ControlBoardOffline				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #3

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	884	Present_Value	85
Object Name				
C3ControlBoardOffline				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #4

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	885	Present_Value	85
Object Name				
C4ControlBoardOffline				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

Evaporator Entering Water Temperature Sensor Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the Evaporator Entering Water Temperature Sensor Fault alarm is active (1) or not active (0).

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	917	Present_Value	85
Object Name				
EvapEntWTempSensorFail				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

Evaporator Leaving Water Temperature 1 Sensor Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the Evaporator Leaving Water Temparature 1 Sensor Fault alarm is active (1) or not active (0).

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	749	Present_Value	85
Object Name				
EvpLvgWTmp1SensorFail				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

Evaporator Leaving Water Temperature 2 Sensor Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the Evaporator Leaving Water Temparature 2 Sensor Fault alarm is active (1) or not active (0).

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	750	Present_Value	85
Object Name				
EvpLvgWTmp2SensorFail				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

External Event

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the External Event Warning is active (1) or not active (0). The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it will interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	924	Present_Value	85
Object Name				
UnitExternalEvent				

Enumeration
0=NoAlarm
1=InAlarm

PUMP #2 START ATTEMPTED - Evaporator Pump #1 Failure

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the PUMP #2 START ATTEMPTED - Evaporator Pump #1 Failure alarm is active (1) or not active (0).

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	575	Present_Value	85
Object Name				
EvPumpFault1				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

PUMP #1 START ATTEMPTED - Evaporator Pump #2 Failure

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the PUMP #1 START ATTEMPTED - Evaporator Pump #2 Failure alarm is active (1) or not active (0).

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	576	Present_Value	85
Object Name				
EvPumpFault2				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

INHIBIT LOAD – Compressor Motor Current High #n Problem

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the INHIBIT LOAD – Compressor Motor Current High #n Problem is active (1) or not active (0). There is one BACnet object for each circuit. This object only applies to AWS application software version 2507500204 or earlier. This point will always read 0 in subsequent versions of the AWS application.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	578	Present_Value	85
Object Name				
C1Cmp1HoldAmpsHi				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	580	Present_Value	85
Object Name				
C2Cmp1HoldAmpsHi				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	582	Present_Value	85
Object Name				
C3Cmp1HoldAmpsHi				

Enumeration
0=NoAlarm 1=InAlarm

LonWorks

No LONWORKS equivalent.

INHIBIT LOAD – Condenser Pressure High Circuit #n Problem

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the INHIBIT LOAD – Condenser Pressure High Circuit #n Problem is active (1) or not active (0). There is one BACnet object for each circuit. This object only applies to AWS application software version 2507500204 or earlier. This point will always read 0 in subsequent versions of the AWS application.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	535	Present_Value	85
Object Name				
C1InhbtLoadCondPressHi				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #2

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	536	Present_Value	85
Object Name				
C2InhbtLoadCondPressHi				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #3

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	537	Present_Value	85
Object Name				
C3InhbtLoadCondPressHi				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #4

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	538	Present_Value	85
Object Name				
C4InhbtLoadCondPressHi				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

INHIBIT LOAD - Evaporator Pressure Low #n Problem

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the INHIBIT LOAD - Evaporator Pressure Low Problem is active (1) or not active (0). There is one BACnet object for each circuit. This object only applies to AWS application software version 2507500204 or earlier. This point will always read 0 in subsequent versions of the AWS application.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	556	Present_Value	85
Object Name				
C1InhbtLoadEvapPressLo				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	557	Present_Value	85
Object Name				
C2InhbtLoadEvapPressLo				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #3

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	558	Present_Value	85
Object Name				
C3InhbtLoadEvapPressLo				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #4

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	559	Present_Value	85
Object Name				
C4InhbtLoadEvapPressLo				

Enumeration
0=NoAlarm 1=InAlarm

LonWorks

No LONWORKS equivalent.

Option Controller Communication Failed Warning

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the Option Controller Communication Failed Warning is active (1) or not active (0). The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	919	Present_Value	85
Object Name				
OptionCtrlrCommFail				

Enumeration
0=NoAlarm 1=InAlarm

LonWorks

No LONWORKS equivalent.

Power Loss While Running Circuit #n Problem

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the Power Loss While Running Circuit #n Problem is active (1) or not active (0). There is one BACnet object for each circuit. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	529	Present_Value	85
Object Name				
C1RestartDelayPwrLRun				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	530	Present_Value	85
Object Name				
C2RestartDelayPwrLRun				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #3

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	531	Present_Value	85
Object Name				
C3RestartDelayPwrLRun				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #4

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	532	Present_Value	85
Object Name				
C4RestartDelayPwrLRun				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

SHUTDOWN – Phase Voltage Protection Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether SHUTDOWN – Phase Voltage Protection Fault is active (1) or not active (0). The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Unit

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	820	Present_Value	85
Object Name				
UnitOFFPhaseVoltage				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	926	Present_Value	85
Object Name				
C1OFFPhaseVoltage				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	927	Present_Value	85
Object Name				
C2OFFPhaseVoltage				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #3

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	928	Present_Value	85
Object Name				
C3OFFPhaseVoltage				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #4

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	929	Present_Value	85
Object Name				
C4OFFPhaseVoltage				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

UNIT Power Restore Warning

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object is used for Intrinisic Alarming. It indicates whether the UNIT Power Restore Warning is active (1) or not active (0). The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it will interfere with this function. This object only applies to AWS application software version 2507500204 or earlier. This point will always read 0 in subsequent versions of the AWS application.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	Type ID	Instance	Name	ID
Binary Value	5	515	Present_Value	85
Object Name				
UnitPowerRestore				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

UNIT SHUTDOWN - Evaporator Leaving Water Temperature Sensor Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the COMPRESSOR SHUTDOWN - Evaporator Leaving Water Temperature Sensor Fault is active (1) or not active (0).

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	Type ID	Instance	Name	ID
Binary Value	5	748	Present_Value	85
Object Name				
UnitOFFEvapLvgWTempSen				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

UNIT SHUTDOWN - Evaporator Water Flow Loss Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the UNIT SHUTDOWN - Evaporator Water Flow Loss Fault is active (1) or not active (0). The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	Type ID	Instance	Name	ID
Binary Value	5	701	Present_Value	85
Object Name				
UnitOFFEvapWaterFlow				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

UNIT STOP - Emergency Stop Alarm

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the UNIT STOP - Emergency Stop Alarm Fault is active (1) or not active (0). The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	921	Present_Value	85
Object Name				
EmergencyStopAlarm				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

UNIT STOP - Evaporator Water Temperatures Inverted

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the UNIT STOP - Evaporator Water Temperatures Inverted Fault is active (1) or not active (0). The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	922	Present_Value	85
Object Name				
EvapWTempInverted				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

UNIT STOP – External Alarm

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the UNIT STOP – External Alarm Fault is active (1) or not active (0). The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	923	Present_Value	85
Object Name				
ExternalAlarm				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

UNLOAD – Compressor Motor Current High #n Problem

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the UNLOAD – Compressor Motor Current High #n Problem is active (1) or not active (0). There is one BACnet object for each compressor. This object only applies to AWS application software version 2507500204 or earlier. This point will always read 0 in subsequent versions of the AWS application.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	565	Present_Value	85
Object Name				
C1Cmp1UnloadAmpsHi				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	567	Present_Value	85
Object Name				
C2Cmp1UnloadAmpsHi				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #3, Compressor #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	569	Present_Value	85
Object Name				
C3Cmp1UnloadAmpsHi				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

UNLOAD – Condenser Pressure High #n Problem

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the UNLOAD – Condenser Pressure High #n Problem is active (1) or not active (0). There is one BACnet object for each circuit. This object only applies to AWS application software version 2507500204 or earlier. This point will always read 0 in subsequent versions of the AWS application.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	540	Present_Value	85
Object Name				
C1UnloadCondPressHi				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	541	Present_Value	85
Object Name				
C2UnloadCondPressHi				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #3

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	542	Present_Value	85
Object Name				
C3UnloadCondPressHi				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #4

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	543	Present_Value	85
Object Name				
C4UnloadCondPressHi				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

UNLOAD - Evaporator Pressure Low #n Problem

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the UNLOAD - Evaporator Pressure Low #n Problem is active (1) or not active (0). There is one BACnet point for each circuit. This object only applies to AWS application software version 2507500204 or earlier. This point will always read 0 in subsequent versions of the AWS application.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	561	Present_Value	85
Object Name				
C1UnloadEvapPressLow				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #2

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	562	Present_Value	85
Object Name				
C2UnloadEvapPressLow				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #3

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	563	Present_Value	85
Object Name				
C3UnloadEvapPressLow				

Enumeration
0=NoAlarm 1=InAlarm

Circuit #4

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	564	Present_Value	85
Object Name				
C4UnloadEvapPressLow				

Enumeration
0=NoAlarm 1=InAlarm

LonWorks

No LONWORKS equivalent.

UNIT STOP - PVM GFP Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the CIRCUIT SHUTDOWN- PVM GFP Circuit #n Fault is active (1) or not active (0). The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	967	Present_Value	85
Object Name				
UnitOffPvmGfp				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

CIRCUIT SHUTDOWN- PVM GFP Circuit #n Fault

Keypad Menu Path No Keypad Equivalent

This commandable BACnet object indicates whether the CIRCUIT SHUTDOWN- PVM GFP Circuit #n Fault is active (1) or not active (0). There is one BACnet object for each circuit. The purpose of this object is for Intrinsic Alarming, and although it is commandable, writing to it may interfere with this function.

Measurement	Units	Data Type	Valid Range	Default Value
Alarm	N/A	Enumerated	0-1	N/A

BACnet

Circuit #1

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	968	Present_Value	85
Object Name				
C1OffPvmGfp				

Enumeration
0=NoAlarm
1=InAlarm

Circuit #2

Object Identifier			Property	
Object Type	**Type ID**	**Instance**	**Name**	**ID**
Binary Value	5	969	Present_Value	85
Object Name				
C2OffPvmGfp				

Enumeration
0=NoAlarm
1=InAlarm

LonWorks

No LONWORKS equivalent.

LONWORKS Device Management

The following functions are specific to the LONWORKS device (in this case, the 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. 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 is capable of receiving a network ReinitializeDevice command to reboot itself (cold start or warm start). The funcationality 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)

This section contains the Protocol Implementation Conformance Statement (PICS) for the MicroTech III Chiller Unit Controller from McQuay International as required by ANSI/ASHRAE (American National Standards Institute/American Society of Heating, Refrigeration, and Air Conditioning Engineers) Standard 135-2004, BACnet; A Data Communication Protocol for Building Automation and Control Networks.

BACnet Protocol Implementation Conformance Statement

Date:	September, 2010
Vendor Name:	McQuay International
Product Name:	MicroTech III Chiller Unit Controller
Product Model Number:	AWS or AGZ
Application Software Versions:	2507500205 (AWS) 251699000 (AGZ-D)
Firmware Revision:	1.1.30s
BACnet Protocol Revision:	Version 1 Revision 4

Product Description

The MicroTech III Chiller Unit Controller with optional BACnet Communication Module is a microprocessor-based controller designed to operate McQuay International Chiller Units and be integrated into BACnet building automation systems.

The 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, control parameters and schedules is available through an equipment-mounted keypad/display and the BACnet control network.

BACnet Standardized Device Profile

The MicroTech III Chiller Unit Controller with optional BACnet Communications Module supports the BIBBs included in the BACnet Advanced Application Controller (B-AAC) profile. Refer to the section below entitled BACnet Interoperability Building Blocks (BIBBs) Supported for a complete listing of BIBBs.

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 – WriteProperty – A	DS-WP-A
Data Sharing – COV – A	DS-COV-A
Alarm & Event – Notification Internal - B	AE-N-I-B
Alarm & Event – ACK –B	AE-ACK-B
Alarm & Event – Information - B	AE-INFO-B
Alarm & Event – Alarm Summary - B	AE-ASUM-B
Scheduling – Internal - B	SCHED-I-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

Standard Object Types Supported

Object-Type	Creatable	Deleteable	Optional Properties Supported	Writeable Properties Not Required To Be Writeable
Analog Input	☐	☐	Description Reliability COV_Increment High_Limit Low_Limit Notification_Class Min_Pres_Value Max_Pres_Value Deadband Acked_Transitions Event_Enable Notify_Type Limit_Enable Time_Delay Event_Time_Stamps	Present_Value[1] COV_Increment[2] Event_Enable
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	Present_Value COV_Increment[2] Event_Enable
Analog Value	☐	☐	Description Reliability Priority_Array Relinquish_Default COV_Increment Time_Delay Notification_Class High_Limit Low_Limit Deadband Limit_Enable Event_Enable Acked_Transistions Notify_Type Event_Time_Stamps	Present_Value[1] COV_Increment[2] Event_Enable

Object-Type	Creatable	Deleteable	Optional Properties Supported	Writeable Properties Not Required To Be Writeable
Binary Input	☐	☐	Description Reliability Inactive_Text Active_Text Notification_Class Acked_Transitions Event_Enable Alarm_Value Notify_Type Time_Delay Event_Time_Stamps	Present_Value Event_Enable
Binary Output	☐	☐	Description Reliability Inactive_Text Active_Text Notification_Class Feedback_Value Acked_Transitions Event_Enable Notify_Type Time_Delay Event_Time_Stamps	Present_Value Event_Enable
Binary Value	☐	☐	Description Reliability Inactive_Text Active_Text Priority_Array Relinquish_Default Notification_Class Acked_Transitions Event_Enable Alarm_Value Notify_Type Time_Delay Event_Time_Stamps	Acked_Transitions Event_Enable Present_Value[1]
Device	☐	☐	Description Location Active_Cov_Subsription (<=50) Local_Time Local_Date UTC_Offset ADPU_Segment_Timeout Daylight_Savings_Status Max_Segments_Accepted Max_Master (MS/TP only) Max_Info_Frames (MS/TP only)	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)

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	
Multi-State Output	☐	☐	Description Reliability State_Text Notification_Class Acked_Transitions Event_Enable Notify_Type Time_Delay Event_Time_Stamps Feedback_Value	Event_Enable
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
Notification Class	☐	☐	Description	Object_Name Description Recipient_List (Max 20) Priority Ack_Required
Calendar	☐	☐	Description	Date_List (Max 10)
Schedule	☐	☐	Weekly_Schedule Exception_Schedule	Object_Name Effective_Period Weekly_Schedule 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. Otherewise, this change will not be saved.

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.

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