

# Installation and Maintenance Manual

# IM 906-5

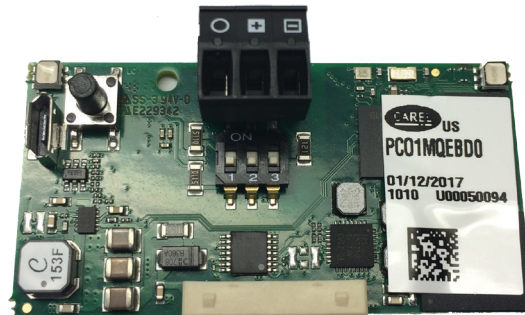
Group: **Controls**

Part Number: **IM 906**

Date: **June 2022**

## MicroTech® II Chiller BACnet® MS/TP Communication Module

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



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This manual contains information regarding the network integration system used with MicroTech® II unit controllers on Daikin Applied chillers. It describes how to install or replace a BACnet® MS/TP communication module on a MicroTech II chiller unit controller. It also explains how to set network parameters and establish communication between the chiller and BACnet network.

## Revision History

IM 906	Feb 2008	Initial release
IM 906-1	Jul 2009	Removed reference to requiring download of CSV file for metric units (it is not required). See Appendix B for details on using the BACnet Configuration Tool to change from English to Metric units of measure.
IM 906-2	Sep 2010	Removed references to AGZ. Corrected Table – Max Masters & Max Info Frames were transposed. Modified BACnet Configuration Tool section.
IM 906-3	Mar 2017	Updated Daikin Applied brand logo and associated references. Updated document part numbers, formatting and Configuration Tool instructions. Added specifications, troubleshooting, figures, and corrected configuration instructions.
IM 906-4	May 2020	Updated to add new BACnet MS/TP hardware.
IM 906-5	Jun 2022	Updated software version and firmware revision. Updated Reference documents.

## Software Revision

This document supports the following BACnet Communication Module software and firmware, and all subsequent versions, until otherwise indicated.

### Current Hardware:

Application Software Version: 2.15.4E

Firmware Revision: AeBCM-2.0.9- BeBCM-2.0.9

### Previous Hardware:

Application Software Version: 2.00

Firmware Revision: AmBCM-16 - BmBCM-485-15g

## Limited Warranty

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

## Reference Documents

Company	Number	Title	Source
American Society of Heating, Refrigerating and Air-Conditioning Engineers	ANSI/ASHRAE 135-2004	BACnet®. A Data Communication Protocol for Building Automation and Control Networks	<a href="http://www.ashrae.org">www.ashrae.org</a>
Daikin Applied	ED 15062	MicroTech II Chiller Unit Controller Protocol Document	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	ED 15057	MicroTech II Chiller Unit Controller Implementation Conformance Statement (PICS)	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IM 736	MicroTech II Chiller Unit Controller BACnet MS/TP Communication Module, PN 350147406 <sup>1</sup> (discontinued)	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOM 1210	WMC - Magnetic Bearing Compressor Chiller Installation, Operation, and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOM 1274	WSC - Single Centrifugal Compressor Installation, Operation, and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOM 1281	WDC/WCC - Dual Centrifugal Compressor Installation, Operation, and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOM 1319	Templifier TGZ Heat Recovery Water Heaters Operating Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOM 1322	WGS - Water-Cooled Scroll Chiller Operation and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOMM ACZ/AGZ (Legacy)	Air-Cooled Condensing Unit Installation, Operation, and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOMM AGZ (Legacy)	Air-Cooled Scroll Chiller Installation, Operation, and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOMM WPV (Legacy)	Centrifugal Chiller Installation, Operation, and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	OM 1127 (Legacy)	AGS - Air-Cooled Screw Chiller Operating Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	OM WGS (Legacy)	Water-Cooled Screw Chiller Operating Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>

1. The legacy version of the BACnet Communication Module hardware consisted of a printed circuit board inside a tan metal enclosure, which was mounted to the door of the unit control panel.

## Hazardous Information Messages

### Recognize Safety Symbols, Words and Labels

The following symbols and labels are used throughout this manual to indicate immediate or potential hazards. It is the owner and installer's responsibility to read and comply with all safety information and instructions accompanying these symbols. Failure to heed safety information increases the risk of property damage and/or product damage, serious personal injury or death. Improper installation, operation and maintenance can void the warranty.



#### CAUTION

Cautions indicate potentially hazardous situations, which can result in personal injury or equipment damage if not avoided.

Static sensitive components. Can cause equipment damage.

Discharge any static electrical charge by touching the bare metal inside the control panel before performing any service work. Never unplug cables, circuit board terminal blocks, or power plugs while power is applied to the panel



#### WARNING

Warnings indicate potentially hazardous situations, which can result in property damage, severe personal injury, or death if not avoided.



#### DANGER

Dangers indicate a hazardous situation which will result in death or serious injury if not avoided. Electric shock hazard. Can cause personal injury or equipment damage. This equipment must be properly grounded. Connections and service to the MicroTech II Unit Controller must be performed only by personnel knowledgeable in the operation of the equipment being controlled.



#### NOTICE

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with this instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his or her own expense. Daikin disclaims any liability resulting from any interference or for the correction thereof.

The BACnet communication module connects the MicroTech II chiller unit controller to a building automation system (BAS). This interface enables the exchange of BACnet objects between the unit controller and the network. The BACnet communication module, together with the unit controller, support the BACnet MS/TP (EIA 485) data link layer (physical layer).

## Features

- Integration into a building automation and control system via BACnet MS/TP (B-AAC profile)
- Simple insertion of the circuit board module into a MicroTech II chiller unit controller
- Several options for setting network parameters via the BACnet Configuration Tool user interface, unit controller, or BAS
- LEDs that indicate communication status and network activity
- BACnet application pre-installed and ready for custom configuration

## Specifications

The following section provides a summary of technical data and conformance to agency listings.

General	
Dimensions	2 3/8" x 1 3/8" (60 x 30 mm)
Operating	
Temperature	14 - 140°F (-10 - 60°C)
Humidity	80% RH
Storage and Transportation	
Temperature	-4 - 158°F (-20 - 70°C)
Humidity	80% RH
Electrical	
Power	8-38 VDC (+5% /-5%) bus connector, max. 1W
Network cable	RS-485 (EIA-485)
	3-wire twisted pair, shielded AWG 20-22, max 3281 ft 888 (1000 m)
Bus connection/ Transceiver	Galvanic isolation
	A+, B-, GND (3 wires)
	1/2 Unit load
Bus termination	120 Ω end of line resistor for units at start or end of trunk
Data transmission (baud rate)	9600, 19200, 38400 (default) 76800 bps
Additional Components	
Plug-in network connector	EIA-485 connection plug
Jumpers (3)	
BACnet Configuration Tool software	Free download on <a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Agency Listings - Unit Controller	
US	UL 873
Canada	CSA C22.2 No. 24-93

**NOTE:** In this manual, RS-485 and EIA-485 are used synonymously.

## Component Data

The BACnet MS/TP communication module is a printed circuit board that inserts directly into the serial slot of the MicroTech II chiller unit controller as shown in Figure 1. There have been two versions of the BACnet MS/TP communication

module. The current version (Figure 2) has a black EIA-485 connector. The previous version (Figure 3) has a green EIA-485 connector.

Figure 1: BACnet MS/TP Communication Module Attached to Unit Controller



Figure 2: Current Version of BACnet MS/TP Hardware

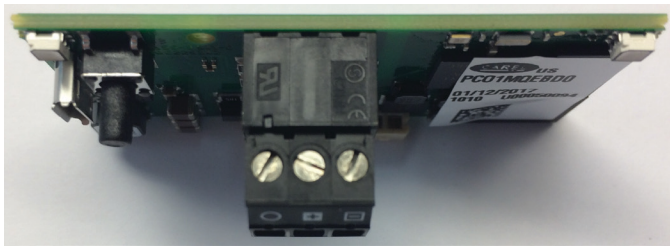
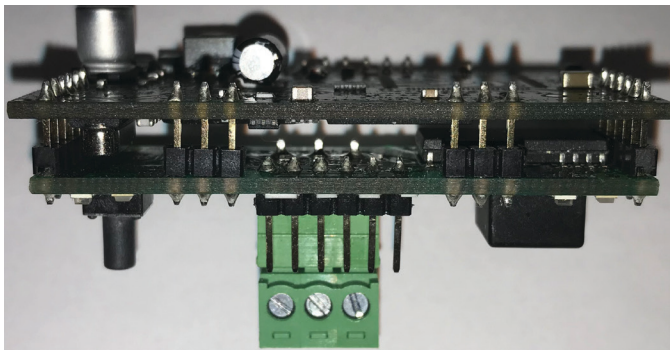


Figure 3: Previous Version of BACnet MS/TP Hardware

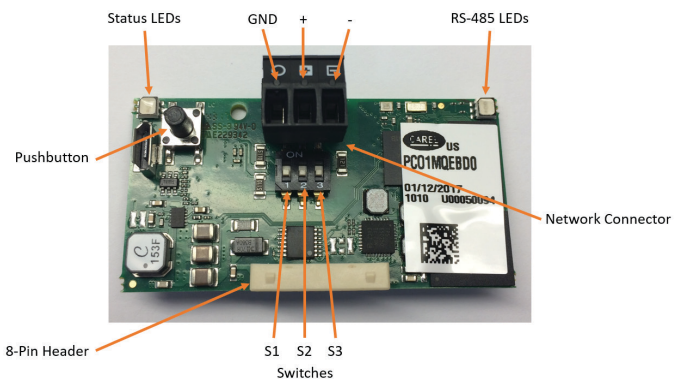


## Current Hardware

### Light Emitting Diodes (LEDs)

The BACnet MS/TP communication module has a Status LED and a Network LED to indicate communication activity and status of the module. These indicators are visible when the communication module is connected to the unit controller and the unit is powered on. See Figure 4 for LED locations.

Figure 4: Current Version of BACnet MS/TP Hardware





## Status LED

The Status LED indicates the communication state between the communication module and the unit controller. [Table 1](#) describes the activity of the Status LED. During power-up or restart, the Status LED shows the following sequence:

- Immediately after startup: quick flashing red-green
- ~2 seconds after startup: steady green
- ~30 seconds after startup: regularly flashing green

Once the startup process is complete, the Status LED consistently flashes green when the module is operating correctly. The table below describes the color and activity of the Status LED.

**Table 1: Status LED Activity - Current Hardware**

Status LED Color	Description
Quick flashing green	Communication is established between the communication module and the unit controller.
Solid red with occasional red flashes	Communication has not been established between the communication module and the unit controller (check to verify protocol is set correctly at unit keypad).
Green/red flashing	The communication module detects an error or a temporary answer fault from the unit controller.

## Network LED

The Network LED indicates the communication status between the BACnet communication module and the BACnet MS/TP network. [Table 2](#) describes the activity of the Network LED. During power-up or restart, the Network LED shows the following sequence:

- Immediately after startup: LED is unlit
- ~20 seconds after startup: LED alternates Green-Red-Green-Red

Once the startup sequence is complete, the table below describes the color and activity of the Network LED.

**Table 2: Network LED Activity - Current Hardware**

Network LED Color	Description
Green with occasional red flashes	Communication is established: The LED activity is described as follows: <ul style="list-style-type: none"> <li>• Green ON: communication module keeps the token</li> <li>• Green OFF: communication module does not keep the token</li> <li>• Red ON: Poll-For-Master; search for a master for which to pass the token</li> </ul>
Green and red ON together (NOTE: Because the hardware uses a multi-color LED, the Green and Red LED's on simultaneously will appear Amber).	Communication is not established. The communication status is in a state of continuous Poll-For-Master. Possible explanations are as follows: <ul style="list-style-type: none"> <li>• Electrical connection error</li> <li>• Communication settings at the unit keypad are not compatible with other devices connected to the network</li> </ul>

## BACnet Network Connector

A 3-pin network plug connects the communication module to the BACnet MS/TP network ([Figure 4](#)). The BACnet MS/TP module is a 2-wire EIA-485 device, so only the + (signal positive) and – (signal negative) terminals should be used.

## 8-Pin Header

The 8-pin header connects the unit controller to the communication module ([Figure 4](#)).

## S1, S2, and S3 Switches

Switches S1, S2, and S3 are located inside the front opening of the cover ([Figure 4](#)).

- Switch S1 adds a 510-Ω polarization resistance between the negative data line (-) and GND
- Switch S2 adds a 120-Ω terminal resistance between the two data lines (+) and (-)
- Switch S3 adds a 510-Ω polarization resistance between the positive data line (+) and the +VCC internal voltage

Refer to Installation and Mounting for information on how to set these switches.

## Pushbutton

The pushbutton is used to either reboot the communication module or temporarily restore the factory defaults ([Figure 4](#)).

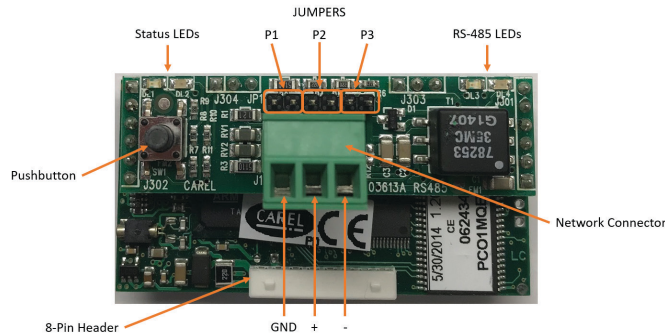
Refer to the Restart or Reset the Communication Module section for detailed information about when and how to use the pushbutton.

## Previous Hardware

### Light Emitting Diodes (LEDs)

The BACnet MS/TP communication module has Status LEDs and a RS-485 LEDs to indicate communication activity and status of the module. These indicators are visible when the communication module is connected to the unit controller and the unit is powered on. See [Figure 5](#) for LED locations.

**Figure 5: Current Version of BACnet MS/TP Hardware**



### Status LED

The Status LED indicates the communication state between the communication module and the unit controller. [Table 3](#) describes the activity of the Status LED. During power-up or restart, the Status LED shows the following sequence:

- Off
- Two seconds after startup: quick flashing red-green
- Five seconds after startup: steady green
- ~50 seconds after startup: regularly flashing

Once the startup process is complete, the Status LED blinks at regular intervals. [Table 3](#) below describes the color and activity of the Status LED.

**Table 3: Status LED Activity - Previous Hardware**

Status LED Color	Description
Quick flashing green	Communication is established between the communication module and the unit controller.
Slow flashing red	Communication has not been established between the communication module and the unit controller.
Green/red flashing	The communication module detects an error or a temporary answer fault from the unit controller.

### Network LED

The Network LED indicates the communication status between the BACnet communication module and the BACnet MS/TP network. [Table 4](#) describes the status of the RS-485 LED.

**Table 4: Network LED Activity - Previous Hardware**

Network LED Color	Description
Green with occasional red flashes	Communication is established: The LED activity is described as follows: <ul style="list-style-type: none"> <li>• Green ON: communication module keeps the token</li> <li>• Green OFF: communication module does not keep the token</li> <li>• Red ON: Poll-For-Master; search for a master for which to pass the token</li> </ul>
Green and red ON together	Communication is not established. The communication status is in a state of continuous Poll-For-Master. Possible explanations are as follows: <ul style="list-style-type: none"> <li>• Connection error</li> <li>• No network is found due to: <ul style="list-style-type: none"> <li>• Electrical connection error</li> </ul> </li> <li>• Communication settings are not compatible with the other network devices that are connected to the network</li> </ul>

### BACnet Network Connector

A 3-pin network plug connects the communication module to the BACnet MS/TP network ([Figure 5](#)). The BACnet MS/TP module is a 2-wire EIA-485 device, so only the + (signal positive) and – (signal negative) terminals should be used.

### 8-Pin Header

The 8-pin header connects the unit controller to the communication module ([Figure 5](#)).

### P1, P2, and P3 Jumpers

Jumpers P1, P2, and P3 are located inside the front opening of the cover ([Figure 5](#)).

- Jumper P1 Adds a 510-Ω polarization resistance between the negative data line (-) and GND
- Jumper P2 Adds a 120-Ω terminal resistance between the two data lines (+) and (-)
- Jumper P3 Adds a 510-Ω polarization resistance between the positive data line (+) and the +5Vdc internal voltage

Refer to [See Installation and Mounting on page 8](#) for information on how to set these jumpers.

### Pushbutton

The pushbutton is used to either reboot the communication module or temporarily restore the factory defaults ([Figure 5](#)). Refer to the Restart or Reset the Communication Module section for detailed information about when and how to use the pushbutton.

## Installation and Mounting

The following section describes how to field install a new BACnet MS/TP communication module or replace an existing module on the MicroTech II chiller unit controller.

### CAUTION

**Electrostatic discharge hazard. Can cause equipment damage.**

This equipment contains sensitive electronic components that may be damaged by electrostatic discharge from your hands. Before you handle a communication module, you need to touch a grounded object, such as the metal enclosure, in order to discharge the electrostatic potential from your body.

### WARNING

**Electric shock hazard. Can cause personal injury or equipment damage.**

This equipment must be properly grounded. Only personnel knowledgeable in the operation of the equipment being controlled must perform connections and service to the unit controller.

## Field Installation Kit

The communication module field-installed kit ships with the following items:

### Current Hardware:

- The BACnet MS/TP communication module circuit board and plastic cover
- EIA-485 plug-in network connector (attached to module)
- This Manual (IM 906)

### Previous Hardware:

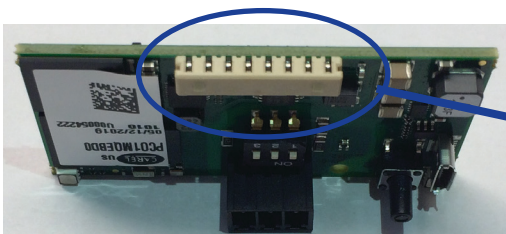
- The BACnet MS/TP communication module circuit board and plastic cover
- EIA-485 plug-in network connector (attached to module)
- Three jumpers (attached to inside cover of module)
- Ferrite-lined plastic enclosure (for noise reduction, if needed)
- This Manual (IM 906)

## Installing a new Communication Module

Follow these steps to install a new communication module on the unit controller.

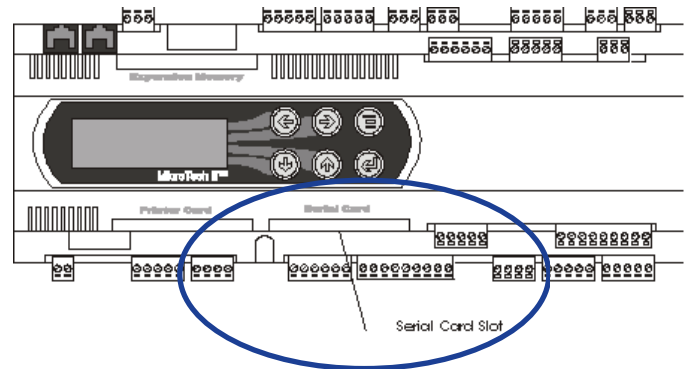
1. Remove power from the unit controller.

**Figure 8: Serial Card Slot Connection**



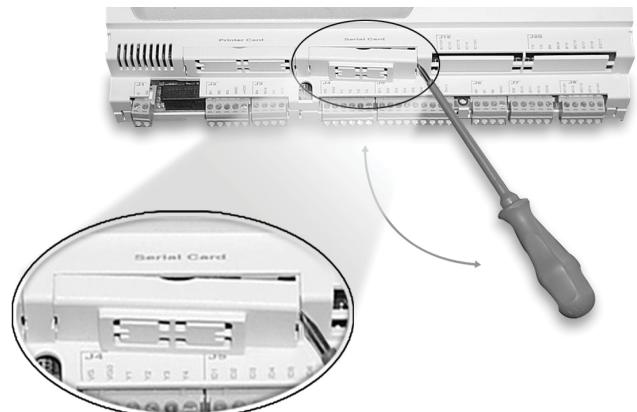
2. Locate the serial card slot on the controller (Figure 6).

**Figure 6: Serial Card Slot in Unit Controller**

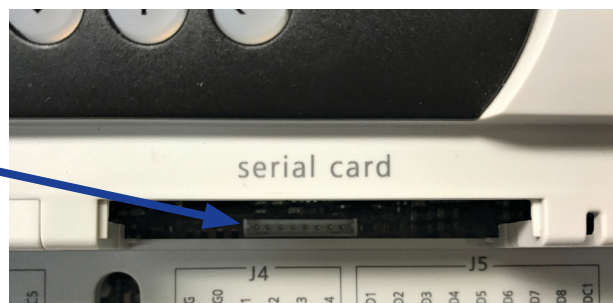


3. Remove the existing cover from the serial card slot if it has not already been removed. Use a small screwdriver to carefully pry the cover off from one end (Figure 7).

**Figure 7: Remove Serial Card Slot Cover**



4. Grasp the communication module, with the network connector on the underside. The 8-pin header must mate to the 8-pin plug in the unit controller. The plug has a guide on each end to direct it into the mating guide on the communication module header. Figure 8 shows the serial card slot with the 8-pin plug that mates to the header on the communication module.



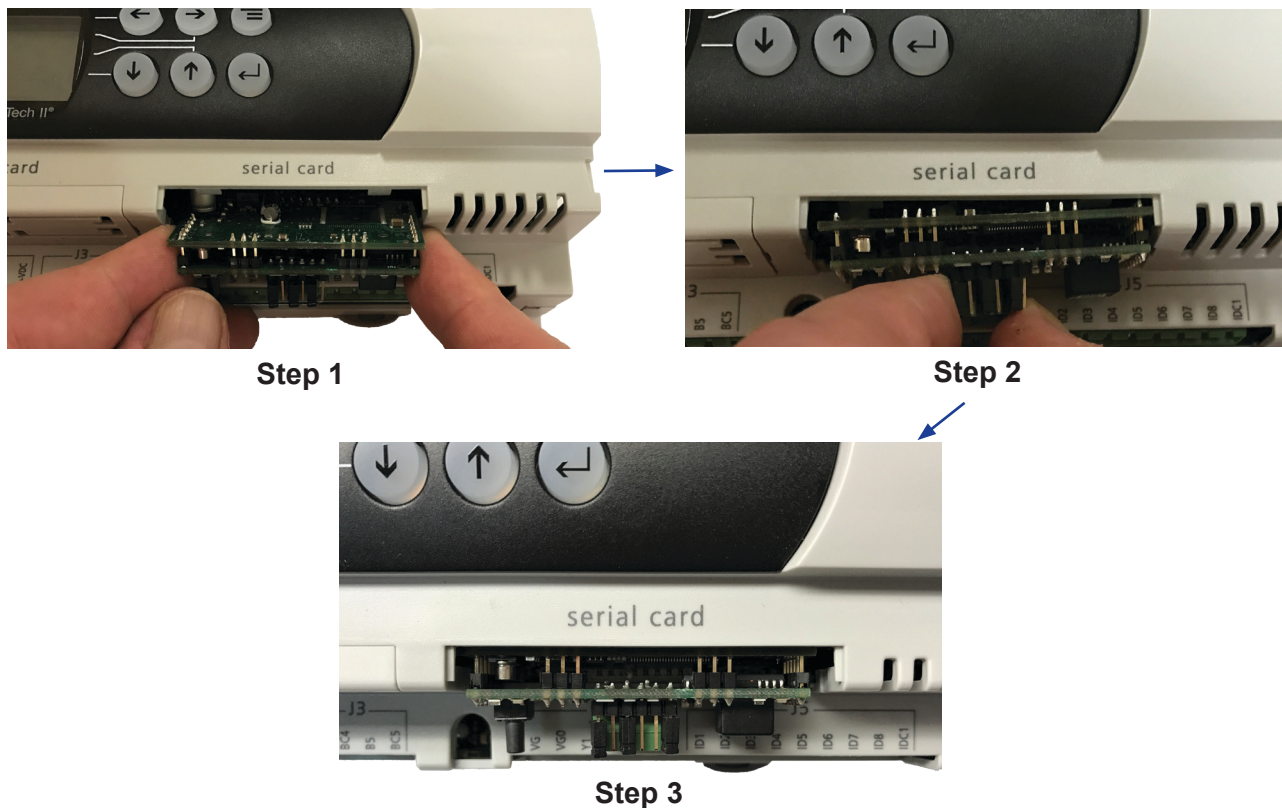


**NOTE:** This operation relies more on fitting the communication module into the connector than seeing the connectors mate.

5. Insert the communication module, pointed up, into the slot. Keeping it *level*, roll the module into position as you guide it into the slot, feeling the connectors line up ([Figure 9](#), Steps 1 and 2).
6. When you feel the connectors align, press the communication module into the plug. Verify that the module is firmly connected ([Figure 9](#), Step 3).

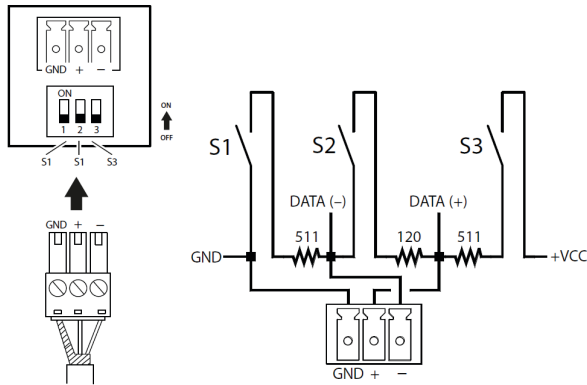
**NOTE:** Previous hardware version is shown below. However, the installation process for current version hardware is identical.

**Figure 9: Inserting the Communication Module**

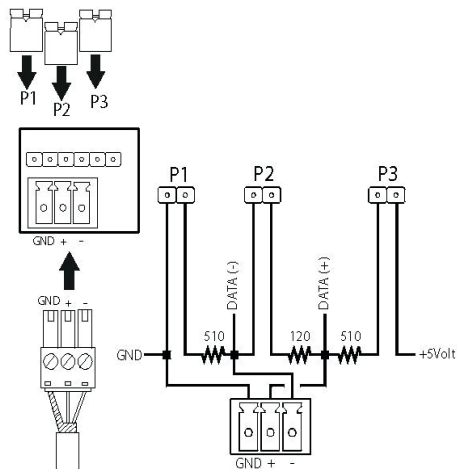


7. If needed, activate dip switches S1, S2, and S3 (current hardware) as shown in [Figure 10](#), or install the P1, P2, and P3 jumpers (previous hardware) as shown in [Figure 11](#). This step is only required if it is the first or last unit on the network. Do not activate switches or insert jumpers on intermediate units.

**Figure 10: Dip Switch Positions (Current Hardware)**



**Figure 11: Jumper Connections (Previous Hardware)**



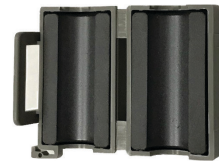
8. Insert the plug-in connector to the communication module.
9. Mount the plastic cover (provided in the field kit) on the serial card slot. Slip the cover over the network connector plug ([Figure 12](#)).

**Figure 12: BACnet MS/TP Communication Module with Cover (Current Hardware)**



10. Connect the communication module to the network ([Figure 14](#) and [Figure 15](#)):
  - a. Route the network cable through the knockout and to the communication module.
  - b. Connect the positive (+) wire of the network cable to Pin 2 of the connector plug.
  - c. Connect the negative (-) wire to Pin 3 of the connector plug. Note that no wire is connected to Pin 1 (GND).
12. (Optional) Install the ferrite-lined plastic enclosure on the network cable for noise reduction ([Figure 13](#)).

**Figure 13: Ferrite Enclosure**



## Replacing a Communication Module

Follow these steps to remove an existing communication module from unit controller and replace it with a new one.

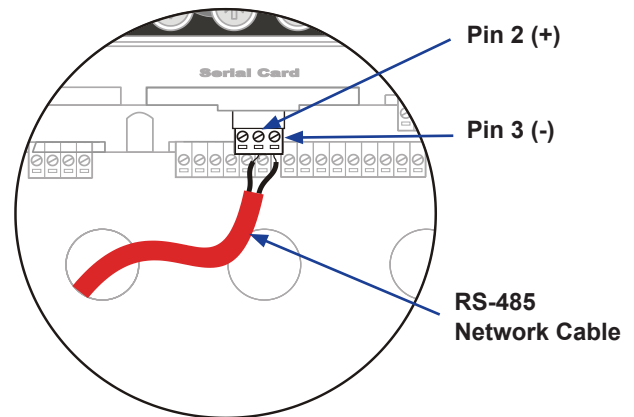
1. Remove power from the unit controller.
2. Locate the serial card slot on the unit controller ([Figure 6](#)).
3. Pull the network cable connector from the communication module.
4. Remove the existing cover from the serial card slot. Use a small screwdriver to carefully pry it off from one end ([Figure 7](#)).
5. Grasp the communication module, with the network connector on the underside. The 8-pin header must mate to the 8-pin plug in the unit controller. The plug has a guide on each end to direct it into the mating guide on the communication module header. [Figure 8](#) shows the serial card slot with the 8-pin plug that mates to the header on the communication module.

**NOTE:** This operation relies more on fitting the communication module into the connector than seeing the connectors mate.

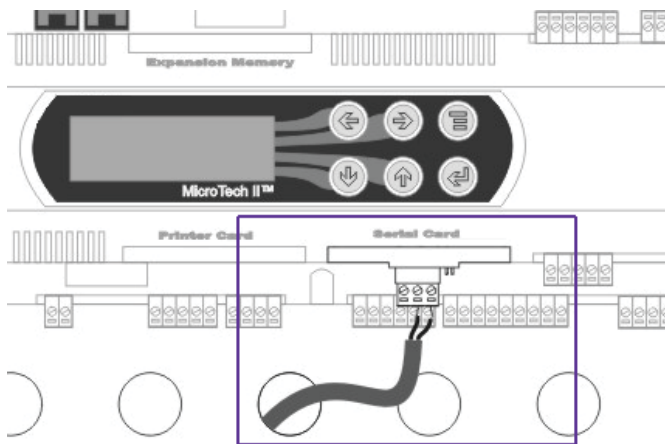
6. Insert the communication module, pointed up, into the slot. Keeping it *level*, roll the module into position as you guide it into the slot, feeling the connectors line up.
7. When you feel the connectors align, press the communication module into the connector. Verify that the communication module is firmly connected.
8. If needed, activate dip switches S1, S2, and S3 (current hardware) as shown in [Figure 10](#), or install the P1, P2, and P3 jumpers (previous hardware) as shown in [Figure 11](#). This step is only required if it is the first or last unit on the network. Do not activate switches or insert the jumpers on intermediate units.

9. Insert the plug-in connector to the communication module.
10. Replace the cover on the serial card slot. Slip the cover over the network connector plug (Figure 12).
11. Insert the network cable connector into the communication module.
12. Connect the communication module to the network: (Figure 14 and Figure 15).
  - a. Connect positive (+) wire of the network cable to Pin 2 of the connector plug.
  - b. Connect the negative (-) wire to Pin 3 of the connector plug. Note that no wire is connected to Pin 1 (GND).
13. (Optional) Install the ferrite-lined plastic enclosure on the network cable for noise reduction (Figure 13).

**Figure 15: Network Connection Detail**



**Figure 14: Network Cable Routing and Connections**



## Set up Network Communication

The following section describes how to configure the BACnet MS/TP communication module for BAS network integration using the BACnet Configuration Tool.

The communication module, when connected properly to the unit controller, is ready to operate with the factory default values of the network parameters. Many default values may be changed with the unit controller keypad or via the network. Several key parameters *require* the use of Daikin Applied's BACnet Configuration Tool. The objective here is to explain how to set addressing parameters for the communication module using the BACnet Configuration Tool.

These instructions assume that the user is familiar with common BACnet concepts, terminology, and addressing requirements.

## Getting Started

The BACnet Configuration Tool is a Microsoft® Windows® based interface used in conjunction with the communication module. The software is available as a free download on the Daikin Applied website. The purpose of the BACnet Configuration Tool is to set, modify, and test network addressing parameters for the communication module. The Configuration Tool displays the BACnet objects and supported properties. It is also used to download new firmware or a new CSV (comma separated variable file), if necessary.

The BACnet Configuration Tool *must* be used to set the following parameters:

- Baud rate
- Device instance number
- MAC address (particularly with multiple chillers on a single network)

## BACnet Configuration Tool Interface Overview

There are four main components to the BACnet Configuration Tool user interface:

- The initial BACnet Configuration MAC Layer Select dialog pop-up box
- The main application with four tabs as described in [Table 5](#)
- The BACdoor OEM Client Status icon and window
- The MS/TP MAC Layer Status icon and window – for diagnostic use only

**Table 5: BACnet Configuration Tool Interface Details**

Tab Name	Description
BACnet Device	Use this tab to read and write the BACnet properties of the Chiller Unit Controller's Device Object. The properties include: BACnet LAN type (IP or Ethernet), Device Instance, UDP Port, APDU Timeout, APDU Retries, and Daylight Savings Time. The firmware and application software versions are also displayed, along with a BACnet Communication Module reboot option.
BACnet Objects	Use this tab to read and configure the BACnet properties of the objects in the BACnet device. Clicking the Read button reads all the properties for the BACnet object that is selected in the pull-down object list. Any of the values for the writable properties can be changed on the form and then committed to the BACnet by clicking Write. The Write button is only displayed if the object has writable properties.
Test	Use this tab to test the reading of the BACnet properties of all the objects contained in the pull-down object list for the BACnet. You must have clicked the Read Object List button before you click Read.
System	Use this tab to download new firmware or CSV files, reboot the BACnet Communication Module, and read the current firmware version.
Audit	Use this tab to activate and deactivate BACnet auditing functions and to upload the BACnet audit file. Used only for BACnet IP.

## The Configuration Tool as a BACnet Device

The Configuration Tool uses standard BACnet commands when communicating via a BACnet network. For example, it issues a ReadProperty or WriteProperty request to the device object (in this case, the Chiller Unit Controller). By default, the Configuration Tool is assigned the device instance 3333 and the MS/TP MAC address 1. This can be changed using the BACdoor OEM Client configuration dialog described in the BACdoor OEM Client Status window section of this document.

## How to use these Instructions

The following instructions are organized into these key subjects:

1. [Installation and Setup](#)
2. [Launch and use the BACnet Configuration Tool](#)
3. [Verify BACnet Communication](#)
4. [Download BACnet Firmware Files](#)
5. [Change BACnet Configuration Tool Addressing Parameters](#)
6. [BACnet MS/TP MAC Layer Select Options](#)
7. [Restart or Reset the Communication Module](#)

Refer to sections #1-3 if:

- You are downloading or accessing the BACnet Configuration Tool for the first time
- You have just installed a new communication module, or have recently replaced a module
- You want to change a previously configured parameter(s) on a communication module that is already installed and functioning on the unit controller



- You want to confirm BAS communication

Sections #4-6 cover additional or optional features of the BACnet Configuration Tool. Refer to any of these sections if:

- You need to download BACnet firmware files or a CSV file - see
- You want to change the configuration options for the BACnet Configuration Tool itself. [See Change BACnet Configuration Tool Addressing Parameters on page 18](#)
- You need to confirm the BACnet MS/TP information packets being passed to the network. [See BACnet MS/TP MAC Layer Select Options on page 19](#)

Finally, section #7 describes how to reset or return the communication module to factory default values using the pushbutton. [See Restart or Reset the Communication Module on page 20.](#)

## Windows and PC Requirements

### Windows Requirements

The BACnet Configuration Tool is compatible with Windows XP and newer operating system versions.

### PC Requirements

An EIA-485 interface is required for use with the BACnet Configuration Tool when connecting to the communication module. An EIA-485 interface can be achieved by one of the following means:

1. Insert an external EIA-485 converter into a USB port on your PC
2. Connect an external RS-232 to EIA-485 converter to an existing PC serial port.
3. Insert an internal EIA-485 PC adapter into your PC.

**NOTE:** The EIA-485 interface is not included with the BACnet Communication Module kit. It is available through B & B SmartWorx ([www.bb-elec.com](http://www.bb-elec.com)) or other suppliers.



### WARNING

**Electric shock hazard. Can cause personal injury or equipment damage.**

This equipment must be properly grounded. Only personnel knowledgeable in the operation of the equipment being controlled must perform connections and service to the unit controller.

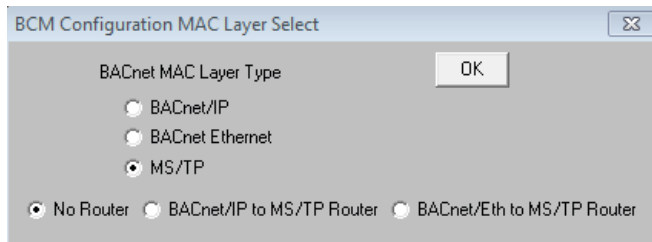
## Installation and Setup

1. Download the BACnet Configuration Tool from <https://oslo.daikinapplied.com/api/sharepoint/getdocument/Doc100/InstallBCMCFG230.zip> or contact the Daikin Applied Controls Customer Support group at 866-462-7829 for direction to the download.
2. Install the BACnet Configuration Tool to your PC (see [Windows and PC Requirements](#)). For support purposes, it is recommended that you install to the default directory.
3. Verify the communication module is installed in the Serial Slot of the unit controller. [See Installation and Mounting on page 8.](#)
4. Verify that the EIA-485 converter is properly connected properly to the PC, and that the wiring between the communication module and the EIA-485 converter have the correct + and - terminals connected.
5. Using the keypad, verify the "Protocol=" on the Network Config menu of the unit controller is set to BACnet. Refer to the appropriate MicroTech II chiller unit controller operation manual ([sSee Reference Documents on page 3](#)) for more information about using the keypad.
6. Double-click on BACnetCFG.exe from the folder in which it was installed. The default installation path is C:\Program Files\DaikinApplied\Chiller BACnet Configuration Tool.

## Launch and use the BACnet Configuration Tool

1. Navigate to the BACnet Configuration Tool (Start/Programs/DaikinApplied/Chiller BACnet Configuration Tool) or double-click on the desktop icon, if present.
2. When the Configuration Tool opens, the BACnet MAC Layer Select dialog box appears (Figure 16).
3. Select both BACnet MS/TP and No Router options and click OK.

**Figure 16: BACnet MAC Layer Select Dialog Box**



**NOTE:** If you have trouble opening the MS/TP portion of the BACnet Configuration Tool, make sure the COM port on the PC is available and working properly, then verify that the BACnet Configuration Tool is using the same COM port. The default COM Port for the Configuration Tool is 1. See [Troubleshooting Procedures](#) for additional tips.

**Table 6: Configuration Tool Default Values**

Property	Default Values
Communication Port	COM1
Baud Rate	38400
MS/TP Station Address	1
Max Master	127
Max Info Frames	10

4. Verify that the Daikin Applied BACnet Configuration Win7 v2.30 or newer BACnet Device appears and the BACnet Device tab is selected (Figure 17). The latest version is 2.30. The Device tab is the primary location for setting network parameters.

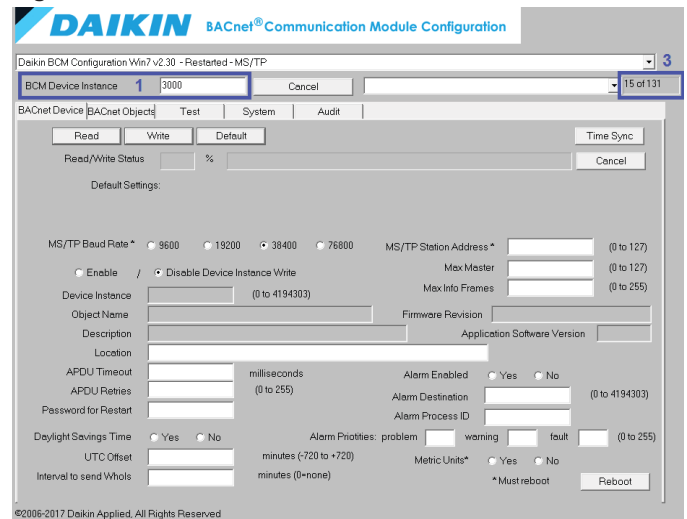
## Set Network Parameters

It is now possible to set the Device Instance Number, MS/TP Station Address (i.e. MAC Address), Max Master, and Baud Rate (in that order). Table 7 shows the full list of available parameters, defaults, and descriptions.

**NOTE:** BACnet communication modules with software application versions prior to 2.0 and firmware revision AmBCM-16 - BmBCM-485-15g support 62 BACnet objects. BACnet communication modules with software application versions 2.0 (AmBCM-16 - BmBCM-485-15g) and newer support 131 BACnet objects. This difference in number of objects is visible when reading the object lists as described in the following section.

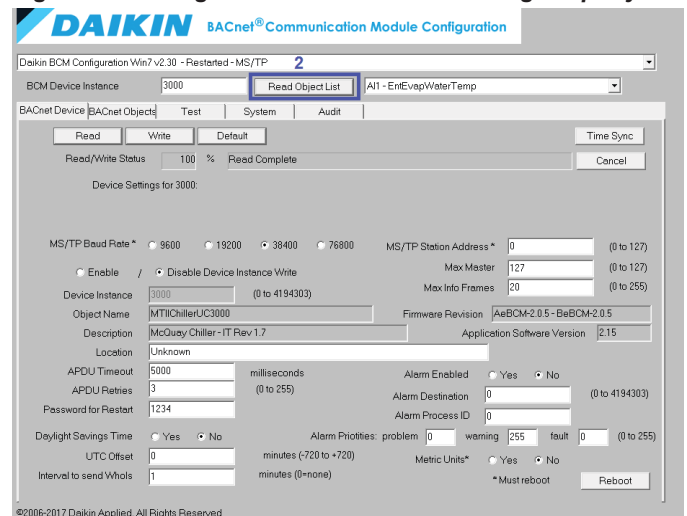
1. Enter the communication module's current Device Instance in the upper left of the screen (Figure 17, box #1).
2. Select Read Object List (Figure 18, box #2). If the BACnet Configuration Tool is communicating with the module, it counts from 0 to 131 (or 62) as shown in Figure 17, box #3.

**Figure 17: Initiate Communications**



3. After the Configuration Tool has successfully counted from 0 to 131 (or 62), press the Read button in the upper left portion of the screen.
4. Verify that the Read/Write Status field counts up to 100%. Once this is complete, the MS/TP Station Address and Max Master fields become populated with values (Figure 18).

**Figure 18: Configuration Tool Communicating Properly**



5. Change the Device Instance Number by following these steps (Figure 19):

- Select Enable Device Instance radio button. This deactivates most of the fields and allows the Device Instance to be modified.
- Enter the new Device Instance Number for the communication module.
- Press the Write button and verify that it reaches a value of 100%.
- Close and re-open the BACnet Configuration Tool.
- Repeat Steps 1-4 using the new Device Instance Number.
- Select Disable Device Instance radio button.

Defaults When the Chiller is Off (or On) for further instructions.

- Press the Write button in the upper left portion of the screen. The Read/Write Status then counts to 100%.
- After reaching 100%, press the Reboot button in the lower right portion of screen. Performing this step reboots the communication module, *not* the BACnet Configuration Tool or the unit controller.
- Verify that the LED behavior on the communication module changes, indicating that a reboot has occurred.
- Allow the communication module at least two minutes to reboot, and then close and re-open the BACnet Configuration Tool.
- Re-establish communication by following these steps:
  - Enter the Device Instance Number in the BACnet Device Instance field in the upper left portion of the screen.
  - Press the Read Object List button and wait until it reaches a value of 0 to 131 (or 62).
  - Press the Read button and verify that it reaches a value of 100%.
  - Verify that all parameters are now at their desired values.

Figure 19: Change Device Instance

6. Change MS/TP Station Address (i.e. MAC Address for the communication module), Max Master, and Max Info Frames as desired. Default values are shown in Table 7.

**NOTE:** The Max Master value should match the largest MS/TP Station Address value to provide maximum system efficiency. If the largest MS/TP Station Address on the network is not known, use a Max Master value of 127. The Max Master value should always be set equal to or less than 127.

7. Change the Baud Rate of the communication module from the default value of 38400, if required by your network (7). **Change Baud Rate**

**NOTE:** Many computers do not support a Baud Rate of 76800. For this reason, your PC may no longer communicate to the module after its Baud Rate has been set to 76800. However, this does not mean that there is an issue with the module. If necessary, to reconnect to the communication module after making the change, please refer to the [Reset Factory](#)

**Table 7: BACnet Device Tab - Network Parameters and Options**

Parameter/Field	Range/Default	Description
Device Instance <sup>1,2,3</sup>	0-4194303 Default: 3000	Device Instance number of the communication module. This must be unique throughout the entire BACnet network. Changes to the Device Instance are made immediately after pressing Write. Upon exiting the BACnet Configuration Tool, the last Device Instance is saved. The Device Instance field then populates with that value when the BACnet Configuration Tool is re-opened.
MS/TP Station Address <sup>1,3</sup>	0-127 Default: 0	MS/TP MAC address of the communication module. Each device on the BACnet network must have a unique MS/TP address. Changing the MAC Address requires a reboot of the communication module.
MS/TP Baud Rate <sup>1,2,3</sup>	9600,19200,38400,76800 Default: 38400	Data transfer speed (bps) of the BACnet MS/TP network. Changing the Baud Rate requires a reboot of the communication module.
Max Master <sup>1,3</sup>	0-127 Default: 127	Specifies the highest possible address for the master. Devices must be less than or equal to 127 (MS/TP only). Changing the Max Master requires a reboot of the communication module.
Max Info Frames <sup>3</sup>	0-255 Default: 20	Specifies the maximum number of information frames the communication module may send before it must pass the token (MS/TP only).
Object Name	Range and Default: NA	This name must be unique throughout the entire BACnet network. The last 6 characters of the default are the last 6 digits of the MAC Address, which is on a printed sticker affixed to the communication module.
Description	Range: NA Default: McQuay Chiller IT Rev 1.7	Describes the application running in the BACnet device. This field cannot be modified.
Location	Up to 65 characters Default: varies	Indicates the physical location of the chiller.
APDU Timeout	Range: Refer to the BACnet Standard Default: 3000 milliseconds	The amount of time between retransmissions of an APDU (Application Layer Protocol Data Unit) requiring acknowledgment for which no acknowledgement has been received.
APDU Retries	Range: Refer to the BACnet Standard Default: 3	The maximum number of times that an APDU can be retransmitted.
Password for Restart	Up to 9 characters Default: 1234	Allows the communication module to be reinitialized from the network. Leaving this field blank indicates that no password is required. If this field is modified, a password is then required before a BACnet client can re-initialize the communication module.
UTC Offset	-720 to +720 minutes Default: 0 minutes	Difference between the UTC and local time.
Daylight Savings Time	Yes or No Default: No	Must be set to No for a BACnet client to synchronize the time on the network.
Enable/Disable Device Instance Write	Range: NA Default: Disable Device Instance Write	Either allows or prevents modification of the Device Instance number.
Interval to send Whols	Range: Refer to the BACnet Standard Default: 1 minute	Frequency at which the communication module sends Whols Requests.
Firmware Revision	0-255 Default: NA	Communication module firmware version number. This field cannot be modified.
Application Software Version	0-255 Default: NA	The BACnet Application_Software_Version property of the Device Object. It reflects the current version of the BACnet component of the communication module.
Alarm Destination	0 - 4194303 Default: 0	Device Object Instance number of the BACnet device that receives the alarm notification.
Alarm Process ID	Range: Refer to the BACnet Standard Default: 0	Process ID used at the receiving BACnet device to determine the response action to the alarm notification. May be changed to suit the BAS preference.
Alarm Priorities Problem	0-255 Default: 0	Priority for Problem Alarms
Alarm Priorities Fault	0-255 Default: 0	Priority for Fault Alarms
Alarm Priorities Warning	0-255 Default: 255	Priority for Warning Alarms
Alarm Priorities Problem	0-255 Default: 0	Priority for Problem Alarms
Alarm Priorities Fault	0-255 Default: 0	Priority for Fault Alarms
Alarm Priorities Warning	0-255 Default: 255	Priority for Warning Alarms
Metric Units	Yes or No Default: No	This property is used only with centrifugal chillers. Changing the unit of measure does not affect the Present Value property read from the chiller. Selecting Yes converts the Units and Relinquish Default properties to metric of measure, while selecting No converts these properties to English. The units of measure must also be changed via the unit controller keypad/display.
Read Object List Button		Select the object to read from the drop-down arrow (appears on the top of all tabs).



Read Button		Reads all the properties of the unit controller Device Object. Before clicking the Read button, verify that the Device Instance at the top of the screen is correct.
Write Button		Writes any value on the BACnet Device tab to the unit controller. Before clicking Write, verify that the Device Instance at the top of the screen is correct.
Default Button		Resets all values on the BACnet Device tab to their default (i.e. factory) values. The default settings are not written to the unit controller until the Write button is clicked.
Time Sync Button		Synchronizes the communication module clock with the current time. Pushing this button sets the clock in the module, but since this is an unacknowledged BACnet command, there is no obvious indication of the change in the BACnet Configuration Tool's Time Synch field. Verify the date and time at the BAS workstation.
Reboot Button		Restarts the communication module if the Password field matches the Password property of the chiller unit controller's Device Object.

1. Items in bold are required for network configuration.
2. Parameter must be set using the BACnet Configuration Tool.
3. Parameter is reset to default value by pressing the communication module's pushbutton.

## Verify BACnet Communication

The BACnet Configuration Tool can also be used to verify that the communication module is successfully passing data to the network. The following section describes how to use the Test tab for this purpose.

1. Open the BACnet Configuration Tool and navigate to the Test tab (Figure 20).
2. Select the center radio button "ObjectID/ObjectName/Units."
3. Press the Read button in the upper left-hand portion of the screen. The Read Status counts to 100% while the Object ID, Object Name, and Present Value fields populate.
4. After reaching 100%, check the Present Value of the variables to verify that they are reading actual current values (Figure 21).

**NOTE:** Another way to verify BACnet communication is to record the present values, then perform a second Read a few minutes later and confirm if some of the temperature measurement values have changed slightly over time.

Figure 20: Open Test Tab and Select Object ID

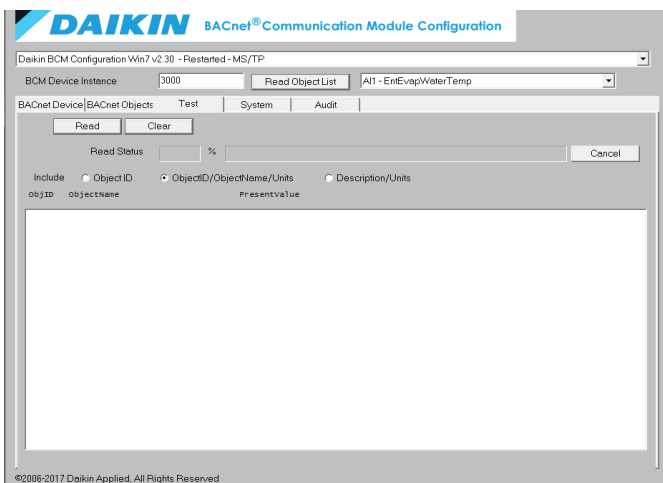
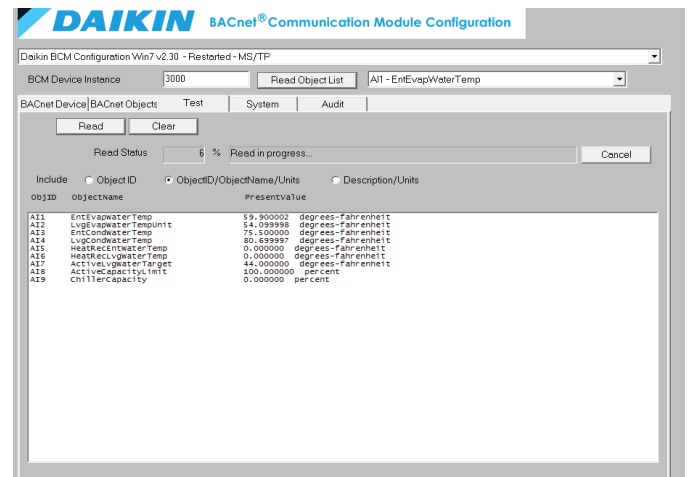


Figure 21: Read Present Values



## Download BACnet Firmware Files

New or updated firmware and/or CSV files can be downloaded using the BACnet Configuration Tool's System tab.

**NOTE:** These files do not need to be updated unless instructed by the Daikin Applied Controls group

The steps below describe the downloading process. Table 8 describes the properties and buttons available on this tab.

1. Go to [www.DaikinApplied.com](http://www.DaikinApplied.com) to download the necessary file(s) or call the Daikin Applied Controls Customer Support group at 866-462-7829 to request a copy of the firmware or CSV file.
2. Save the file on your hard drive.
3. Open the BACnet Configuration Tool, read the Object List, then Read the Device Properties.
4. Navigate to the System tab (Figure 22).
5. Click the Browse Button, then locate and select the desired file from your hard drive. The type of file to be downloaded depends on the filename and its extension. Typical Filenames are:
  - flash\_apps.bin
  - flash\_sys.bin
  - flash\_apps-20170101.car
  - bcm.csv
6. Click on the Download button.
7. Once the download is complete, reboot the communication module.
8. View the firmware version to confirm the update was successful.

**NOTE:** Do not load BACnet files without first consulting Daikin Applied Controls Customer Support. It is not expected for the BACnet module to be routinely updated in the field. If the module must be updated and both BACnet software and firmware must be downloaded to the module, the BACnet firmware (flash\_sys) file must be downloaded first, then the software (flash\_apps) file should be downloaded.

Figure 22: System Tab



Table 8: System Tab Details

Property/Button	Description
Firmware Version	The communication module firmware version.
Read Version Button	Reads the firmware version of the communication module.
Status and bytes %	Indicates the download progress in bytes and as a percentage (%) of the total bytes to be downloaded.
Password	Password property of the Device Object.
Reboot Button	Restarts the communication module if the Password matches the Password property of the Device Object. Reboot does not restart the chiller unit controller.
Download Button	Writes the PC file from the Local PC File field to the flash_apps.bin or flash_sys.bin firmware file, or the bcm.csv or bcmmap.csv CIT file on the communication module.
Device's Flash File	Indicates the file to be downloaded to the communication module.
Local PC File	Contains the location of the file to be downloaded.
Browse Button	Provides the ability to select the directory of the file to download. Another option is to type the complete file name into the Local PC File field.

Table 9: BACnet Files for Download

File Name	Description
flash_apps.bin	Software file for the communication module. This file may change if the software changes. This file does not need to be updated unless instructed by the Daikin Applied Controls Customer Support group.
flash_sys.bin	Firmware file for the communication module. This file does not need to be updated unless instructed by the Daikin Applied Controls Customer Support group.
bcm.csv	CIT file of the BACnet Configuration Tool.

## Change BACnet Configuration Tool Addressing Parameters

The BACdoor OEM Client Status tab is available for diagnostic purposes or to change the settings of the BACnet Configuration Tool itself. It is *not* used to modify settings specific to the communication module. It is only required if any of the following statements are true:

1. The Baud Rate was modified from 38400
2. The MSTP Station (MAC) Address was set to 1
3. The Device Instance of the communication module has been set to 3333, which is the same default value as the BACnet Configuration Tool
4. If the computer setting for the EIA-485 converter needs to be changed from Comm Port 1

**NOTE:** In order for the BACnet Configuration Tool and the communication module to operate correctly, they must both be at the same Baud Rate but have different Device Instance Numbers and MS/TP Nodes.

The BACnet Configuration Tool uses standard BACnet commands when communicating via a BACnet network. For example, it issues a ReadProperty or WriteProperty request to the device object (in this case, the chiller unit controller).

The BACdoor OEM Client Status displays the status of BACnet packets as they are being exchanged among the BACnet

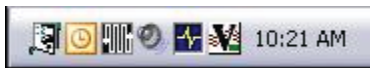
Configuration Tool, the communication module, and any other BACnet devices on the network. It also displays a list of all devices that initiate BACnet I\_Am service packets.

Typically the BACdoor OEM Client Status window can remain minimized in the Task Bar. It is separated from the BACnet Configuration Tool because the BACnet Configuration Tool rarely requires changes. The separation also helps to differentiate the BACnet Configuration Tool parameters from the communication module properties.

Follow these steps to change Baud Rate, MSTP Station Address, Device Instance, or other parameters specific to the BACnet Configuration Tool:

1. Navigate to the BACdoor OEM Client Library icon on the lower right of the screen (Figure 23). This icon appears when the BACnet Configuration Tool is open.

Figure 23: BACdoor OEM Client Library



2. Double-click on the BACdoor OEM Client Library icon to open the BACdoor OEM Client Library Configuration screen (Figure 24). The information on this screen indicates the BACnet address settings for the BACnet Configuration Tool.
3. Change the BACnet Configuration Tool's addressing parameters as necessary.
4. When the changes are completed, select OK.
5. Close and re-open the BACnet Configuration Tool to save the changes.

Figure 24: BACdoor OEM Client Library Configuration

BACDOOR OEM Client Library Configuration

Our Device Instance: 3333 OK Cancel

Our Object Name: BACLIB

Our Description: BACdoor Device Object

Our Location: unknown

Whos/Iam Interval: 1 Minutes [0=None]

BACnet/IP Parameters

0.0.0.0 (DHCP) [0.0.0.0] Intel(R) 82579LM Gigabit Network Connection

UDP port: 0xBAC0 Subnet: 255.255.0.0

MS/TP Parameters

Com Port (restart): 1 Baud (restart): 38400 (no parity, 8 data, 1 stop)

TS (MS/TP Node): 1 MaxMaster: 127 MaxInfoFrames: 10

## BACnet MS/TP MAC Layer Select Options

**NOTE:** Use the BACnet MS/TP MAC Layer Status portion of the BACnet Configuration Tool for diagnostic purposes only as it impacts BACnet MS/TP operation.

The BACnet Configuration Tool supports the following BACnet Media Access Control (MAC) layers as displayed in the layer select window (Figure 16).

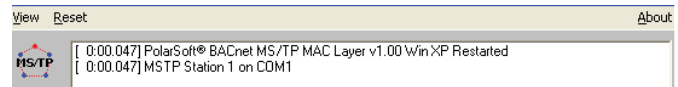
- BACnet ISO 8802-3 "Ethernet"
- BACnet/IP
- BACnet Master Slave/Token Passing (MS/TP) over EIA-485

The BACnet MS/TP MAC Layer Select tab can be used to display network information packets. The BACnet MS/TP MAC Layer Status window is minimized into the Windows Tool Bar at the bottom of the display screen and is indicated by the icon. Follow these steps to use this feature:



1. Click the icon to make the BACnet MS/TP MAC Layer Status window visible (Figure 25).

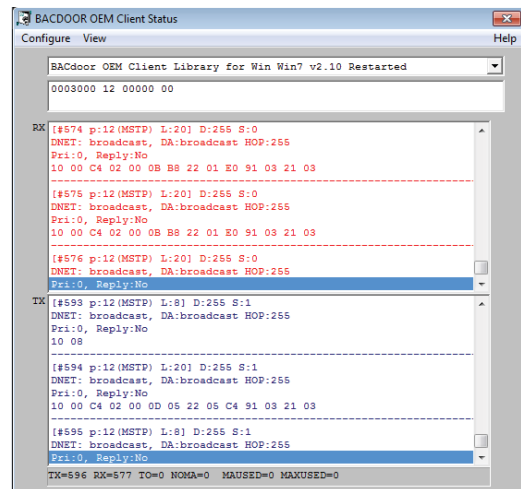
Figure 25: BACnet MS/TP MAC Layer Status Window



2. Select Trace All Messages from the View drop-down menu to expand the available information. Minimize the BACnet MS/TP Layer Select during an image upload.

The BACnet MS/TP MAC Layer Status expanded window now displays the status of MS/TP packets as they are being exchanged among the BACnet Configuration Tool, the communication module, and any other BACnet MS/TP Devices on the network (Figure 26).

Figure 26: MS/TP MAC Layer Status Expanded Window



The BACnet Configuration Tool can be set up so that it bypasses the MAC Layer Select window altogether to automatically open using with the pre-defined BACnet MAC layer type. Follow the steps below should you choose to enable this feature:

1. Create a file named BACSET.INI in the Windows or WINNT folder using a text editor such as Notepad. Skip this step if a file named BACSET.ini already exists.
2. Place the following line as the first line of the file:  
[General]
3. Place the following line on the second line of the file:  
MACtype=MSTP
4. Save and close the file.

## Restart or Reset the Communication Module

The communication module's pushbutton is used to restart the communication module or reset it to the default factory values. Figure 3 shows the location of the pushbutton.

Below are the parameters that revert to default values when the pushbutton has been pressed. Refer to Table 7 for acceptable ranges and full descriptions of these parameters.

Parameter	Factory Default
Device Instance	3000
MS/TP Station Address	0
Max Masters	127
Max Info Frames	20
Baud Rate	38400

## Restart the Communication Module

1. Verify that the communication module is installed correctly with the Status LEDs flashing continuously.
2. Hold the pushbutton for more than five seconds and no more than 10 seconds.
3. Around 10 seconds after releasing the button, the Status LEDs stop flashing, and 15 seconds later the communication module restarts. At this point, the Status LEDs are quickly flashing (red-green-red-green...).

## Reset Factory Defaults When the Chiller is Off

1. Unplug network connections from the communication module.
2. Press and hold down the pushbutton for at least 20 seconds.
3. Apply power to the unit controller.
4. Keep the pushbutton pressed for at least 20 seconds.
5. Release the pushbutton once the Status LEDs start to blink red.
6. After three slow red blinks, the LEDs turn green and then rapidly blink dark red three times to indicate the command has been successful.

## Reset Factory Defaults When the Chiller is On

1. Unplug network connections from the communication module.
2. Press the pushbutton for at least five seconds and no more than 10 seconds.
3. Release the pushbutton.
4. After another five seconds, press and hold the pushbutton again. The Status LEDs stop flashing and then quickly flash red.
5. Release the pushbutton when the status LEDs start slowly flashing red.
6. After three slow red blinks, the LEDs turn green and then rapidly blink dark red three times to indicate the command has been successful.

**NOTE:** After successfully using the pushbutton, the communication module only retains the default parameter values until the next reboot is performed. The communication module implements the latest user-specified values after a reboot has been performed without the pushbutton being pressed.

Refer to the appropriate MicroTech II Chiller Unit Controller Operation Manual for unit settings and MicroTech II Chiller Protocol Document, ED 15062 for a complete list of BACnet objects and network integration details ([www.DaikinApplied.com](http://www.DaikinApplied.com)).



## Troubleshooting Procedures

Follow these general procedures if you can control the MicroTech II chiller unit controller from the keypad/display, but are not able to communicate with the unit via the network.

Also refer to [Table 10](#) to diagnose and correct issues related to the setup and use of the BACnet Configuration Tool.

### Network Parameters

- Confirm that the BACnet communication module is inserted properly and that the LEDs are functioning properly ([Table 1](#) and [Table 2](#)).
- Verify that network parameters are set correctly as shown in [Table 7](#).
- Make sure there are no duplicate devices on the network.
- Verify the unit controller is set up to communicate BACnet using the keypad/display. Refer to the proper Chiller Unit Controller OM for details.

### Network wiring

If performance is unsatisfactory or network is experiencing issues such as noise, loss of data packets, or collisions:

- Confirm that the shield is landed at only one point in the trunk.
- Be aware that network topology must be daisy-chain or line topology (no T-Taps or ring layout).
- Verify that network wiring does not exceed 4000 ft total distance limit (without repeaters) at 76800 bps baud.
- Verify that polarity is maintained.
- Check that there are end-of-line termination resistors at the first and last device on the trunk. This is required by the RS-485 specification.
- Verify that the network trunk avoids strong sources of electromagnetic interference (EMI).
- Verify that the network trunk is not located near a DC load switch (relay).

### Communications

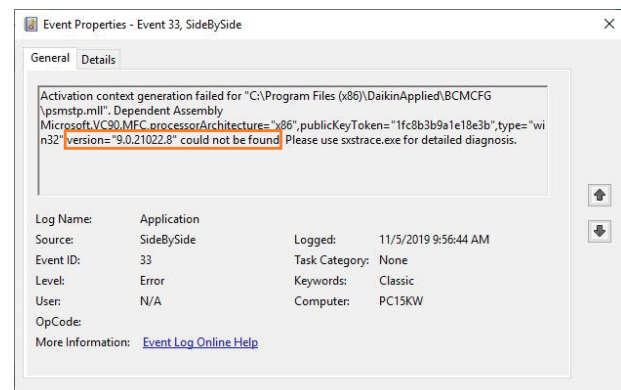
- Verify that other devices on the network are still communicating.
- Verify that all appropriate configuration has been done to BAS server.

Contact the Daikin Applied Controls Customer Support group at 866-462-7829 for additional assistance, if necessary.

**Table 10: BACnet Configuration Tool Troubleshooting**

Symptom	Issue	Solution
Unable to read or write to the unit controller via the communication module	MAC Layer Type incompatibility; incorrect setup of communication module and BACnet Configuration Tool parameters	<ul style="list-style-type: none"> <li>Check that the MAC Layer Type has been set to MS/TP</li> <li>Verify that the Device Instance Number of the communication module has been entered in the Device Instance field in the BACnet Device tab</li> <li>Make sure the Device Instance Number of the communication module is unique on the BACnet network and does not match the Device Instance of the BACnet Configuration Tool. See <a href="#">Verify BACnet Communication</a> section</li> <li>Verify the Baud Rate of the BACnet Configuration Tool matches the communication module</li> </ul>
Cannot change the Device Instance Number	The Device Instance Write property is disabled	Select Enable from the BACnet Device tab to enable the Device Instance Write property
When selecting MS/TP from the MAC Layer Selection options, a series of three errors appear, including: "Error: [5] Access is denied," "MS/TP Init Failed (-306)" and "BACLIBinit failed"	The serial port is already in use by another program or the BACnet Configuration Tool is trying to use a serial port that is not present or working	<p>Close any programs that are using the serial port and restart the BACnet Configuration Tool. If the problem persists, verify that the BACnet Configuration Tool is using the correct serial port by following these steps:</p> <ol style="list-style-type: none"> <li>1. Open the Configuration Tool by selecting BACnet IP as the MAC Layer Type</li> <li>2. In the lower right corner of your task bar, click on the BACdoor OEM Client icon.</li> <li>3. Click Configure</li> <li>4. Change COM Port to the COM Port on your PC</li> <li>5. Restart the BACnet Configuration Tool by choosing MS/TP as the MAC Layer Type</li> </ol>
A "?Write Error [-111]?: Timeout at MS/TP Station Address" error appears when trying to modify the MS/TP Station Address	An MS/TP Station Address may already exist	Change the MS/TP Node Address of the BACnet Configuration Tool using the BACdoor OEM Client tab. This address needs to be unique on the network. It may already be set to the address you are trying to write to the BACnet Configuration Tool
Receive the following Message: "MS/TP Library Load Failed: The application has failed to start because its side-by-side configuration is incorrect. Please see the application event log or use the command-line sxstrace.exe tool for more details." Issue - PC is missing a required Microsoft Visual C++ 2008 Redistributable Package	PC is missing a required Microsoft Visual C++ 2008 Redistributable Package	<ol style="list-style-type: none"> <li>1. Open Event Log by typing, "Event Viewer" in the search bar of the Windows Start Menu, then clicking the "Event Viewer" link.</li> <li>2. In the left pane of the Event Viewer window, click to expand the "Applications and Services Logs."</li> <li>3. Click BCM Configuration Tool within the list.</li> <li>4. From the center pane, double-click the event.</li> <li>5. In the message pane, locate the version of missing Microsoft Visual C++ 2008 Redistributable Package (Figure 27).</li> <li>6. Locate and install the missing version from Microsoft's website.</li> </ol>

**Figure 27: Event Properties Window**



## Parts List

**Table 11: Replacement Parts List**

Description	Part Number
MicroTech II BACnet MS/TP Communication Module Field Kit Kit includes: BACnet communication module circuit board, network connector, and IM 906	350147407

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





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