

# Installation and Maintenance Manual

# IM 735-4

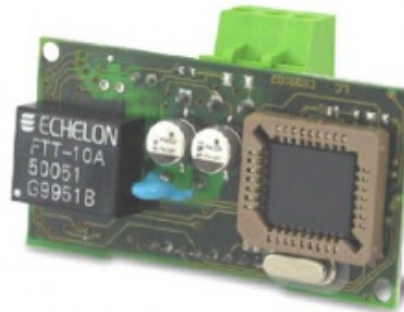
Group: **Controls**

Part Number: **IM 735**

Date: **March 2017**

## MicroTech® II Chiller LonWorks® 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 LONWORKS communication module on a MicroTech II chiller unit controller. It also explains how to set network parameters and establish communication between the chiller and the LONWORKS network.

## Revision History

IM 735-0	Jan 2003	Initial release.
IM 735-1	May 2005	Corrections to Figures 6 and 7. Added WGS, WMC, HSC, TSC and HDC docs to Reference Documents section and cover page.
IM 735-2	Nov 2005	Added setup for screw and scroll (non-centrifugal) chillers.
IM 735-3	Dec 2010	Added part number to Replacement Parts list for new version of unit controller and compatible communication module (pCO3). Updated table on p. 12 and chiller models on cover page.
IM 735-4	Mar 2017	Updated Daikin Applied brand logo and associated references, document part numbers, parts list

## Notice

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## Software Revision

This document supports LONWORKS communication module firmware version CHCHLA25 and all subsequent versions until otherwise indicated.

## 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
LonMark® International	078-0120-01F	LonMark Layers 1–6 Interoperability Guidelines, Version 3.0	<a href="http://www.lonmark.org">www.lonmark.org</a>
LonMark International	078-0120-01F	LonMark Application Layer Interoperability Guidelines, Version 3.3	<a href="http://www.lonmark.org">www.lonmark.org</a>
Echelon® Corporation	078-0156-01G	LONWORKS®FTT-10AFree Topology Transceiver Users Guide	<a href="http://www.echelon.com">www.echelon.com</a>
LonMark International	8040_10	LonMark Functional Profile: Chiller, Version 1.0	<a href="http://www.lonmark.org">www.lonmark.org</a>
Daikin Applied	IMM AGS	MicroTech II Air-Cooled Screw Chiller Installation and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOMM ACZ/AGZ	MicroTech II Air-Cooled Condensing Unit Installation, Operation, and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOMM ACZ	MicroTech II Air-Cooled Condensing Unit Installation, Operation, and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOMM AGZ	MicroTech II Air-Cooled Scroll Chiller Installation, Operation, and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOMM WGZ	MicroTech II Water-Cooled Scroll Chiller Installation Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOMM WPV	MicroTech II Centrifugal Chiller Installation, Operation, and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOMM WSCWDC	MicroTech II Chiller Unit Controller Installation, Operation, and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	OM AGS	MicroTech II Air-Cooled Screw Chiller Operating Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	OM CentrifMicro II	MicroTech II Unit Controller for Centrifugal Chillers and Templifiers Operating Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	OM WGS	MicroTech II Water-Cooled Screw Chiller Operating Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	OMM TGZ	MicroTech II Templifier TGZ Heat Recovery Water Heaters Operating Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	OM WMC	MicroTech II Magnetic Bearing Compressor Chiller Operating Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>
Daikin Applied	IOMM TSC	MicroTech II Templifier Single Compressor Centrifugal Installation, Operation, and Maintenance Manual	<a href="http://www.DaikinApplied.com">www.DaikinApplied.com</a>

## 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 LONWORKS communication module connects the MicroTech II chiller unit controller to a building automation system (BAS). This interface enables the exchange of LONWORKS variables between the unit controller and a LONWORKS Operating Network or LON.

## Features

- Integration into a building automation and control system via LONWORKS
- Installed with LonMark® 3.3 certified firmware that conforms to the chiller functional profile
- Network controller (Neuron chip) handles the complete LONWORKS network protocol and user application
- LEDs that indicate communication status and network activity
- Configurable using standard LONWORKS commissioning tools such as Echelon's® LonMaker® software
- Circuit board components enclosed in protective housing and inserts into the unit controller

## Specifications

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

General	
Dimensions	2 3/8" x 1 3/4" (60 x 30 mm)
Operating	
Temperature	32 - 149°F (0 - 65°C)
Humidity	<80% RH
Storage and Transportation	
Temperature	-4 - 158°F (-20 - 70°C)
Humidity	<80% RH
Electrical	
Power	DC 5 V (+5% / -5%)
Network	
Network cable	LON interface: Plug-in terminals 2 wires, interchangeable
Bus connection/ Transceiver	Galvanically isolated, 78k baud TP/FT-10 transceiver
LONWORKS data memory	56 kbyte flash memory for the user application
Additional Components	
Network connector	3-pin (GND, A, and B) network connector plug
Ferrite enclosure	Snap-on ferrite core as optional attachment to the network cable for noise reduction
Agency Listings	
US	UL 873
Canada	CSA C22.2 No. 24-93

## Component Data

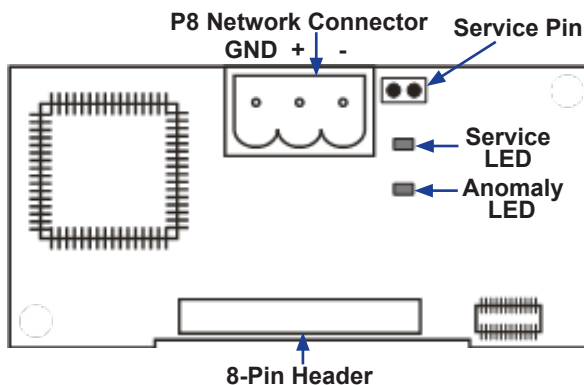
The LONWORKS communication module is a printed circuit board that inserts directly into the serial card slot of the MicroTech II chiller unit controller. [Figure 1](#) shows the

communication module when fully inserted. [Figure 2](#) shows the important features of the communication module circuit board, which are described in the following section.

**FIGURE 1: LONWORKS Communication Module Attached to Unit Controller**



**Figure 2: Communication Module Main Features**



### LONWORKS Network Connector

The P8 network connector is the physical connection between the LONWORKS communication module and the FTT-10A bus. Two pins are used for this purpose as indicated below and shown in [Figure 2](#).

Pin	Function
GND	No Connection
A	FTT-10A
B	FTT-10B

### 8-Pin Header

The 8-pin header connects the unit controller to the LONWORKS communication module.

### Service Pin

The service pin generates a service-pin message that contains the Neuron® ID and the program code identification of the node ([Figure 2](#)). The service pin message is used to commission the LONWORKS communication module by broadcasting it on the network.

The service pin consists of two terminals next to the network connector that protrude below the cover on the serial card port of the unit controller. To activate the service pin, short the two pins together for an instant with the tip of a screwdriver or similar tool.

## Light Emitting Diodes (LEDs)

The communication module has a Service LED and an Anomaly LED to indicate communication activity and status of the LONWORKS communication module ([Figure 2](#)). These indicators cannot be seen when the module is installed in the controller. [Table 1](#) describes the color and activity of both LEDs.

**Table 1: LED Activity**

LED	Function
Service (Green)	Lights when the service-pin is shorted
	Flashes (1 second) during a Wink command
	Flashes (1/2 second) during commissioning
	Blinking when the communication module is not commissioned
Anomaly (Red)	Flashes (1 second) when the communication module has no application program
	Lights when there is a connection error or other issue related to the communication module

## Neuron ID

The basis of the LONWORKS communication module is an Echelon Neuron integrated circuit (Neuron chip). Every Neuron chip has a unique 48-bit Neuron ID or physical address. The Neuron ID can be used to address the device on the LONWORKS network.

## Transceiver

The LONWORKS communication module is equipped with an Echelon Free Topology Transceiver (FTT-10A) to enable network communication. The transceiver supports free network topology (including ring, star, and daisy-chain) using unshielded, twisted pair cable with polarity insensitive connections at each node. Free topology segments require termination for proper transmission performance.

Data transmission rate on the network is 78 kbps (baud).

## Bus Termination

Bus termination resistors are used for properly terminating a network based on twisted pair cabling with attention to impedance.

**NOTE:** Refer to Echelon LONWORKS FTT-10A Transceiver User's Guide for details regarding acceptable configurations, cabling requirements, terminations, impedance, and other requirements ([www.echelon.com](http://www.echelon.com)).

## Transmission Specifications

Component	Value
Network topology	Flexible Free Topology
Neuron chip processor	3150
Free Topology Transceiver (FTT-10A)	50051
Cable types	TIA Category 5 (recommended)
Maximum cable length	1476 ft (450 m) per segment (total of all lines)
Maximum node separation	820 ft (250 m)
Data transmission	Two-wire, half duplex
Data transmission rate	78 kbps (baud)
Bus terminator	Free topology: use one (1) 52.3 $\Omega$ bus terminator at the busiest point of the network. Daisy chain or standard line (dual) topology: use two (2) 105 $\Omega$ bus terminators at the end of both network segments.
Repeaters and routers	Repeaters and router are typically used when the entire cable length in a given segment exceeds 1476 ft (450 m) in a free topology or 2953 ft (900 m) in a line topology. Each trunk can have at maximum one physical repeater. Repeaters and routers may not be used in a ring topology. They must be placed before the network's ring port.

## Installation and Mounting

The following section describes how to field install a new LONWORKS 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 LONWORKS communication module field-installed kit ships with the following items:

- The LONWORKS communication module circuit board and plastic cover
- Network connector
- Ferrite enclosure (for noise reduction, if necessary)
- This manual (IM 735)

## Tools Required

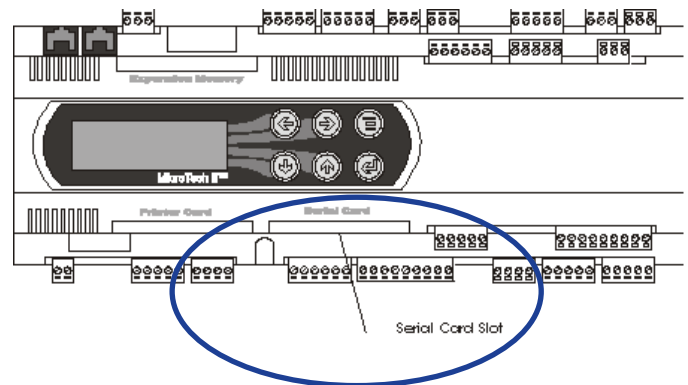
- A small flathead screwdriver or similar tool as shown in [Figure 4](#)
- Needle-nose pliers or similar tool as shown in [Figure 5](#)

## Installing a new Communication Module

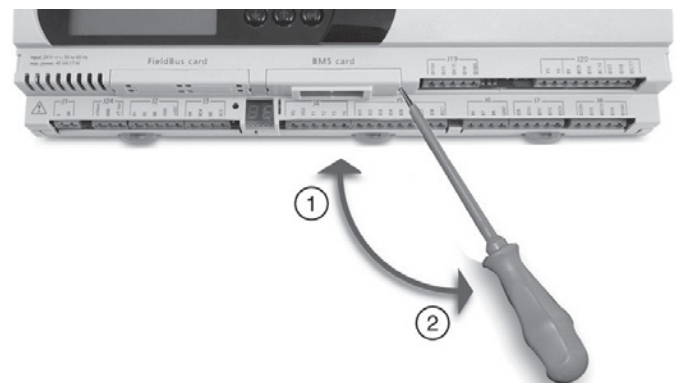
Follow these steps to install a LONWORKS communication module on the unit controller.

1. Remove power from the unit controller.
2. Locate the serial card slot on the unit controller ([Figure 3](#)).
3. Remove the cover if it has not already been removed. Use a small screwdriver to carefully pry the cover off from one end ([Figure 4](#)).

**Figure 3: Serial Card Slot in Unit Controller**

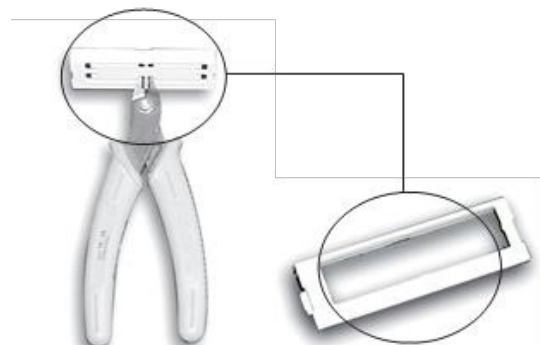


**Figure 4: Remove Serial Card Slot Cover**



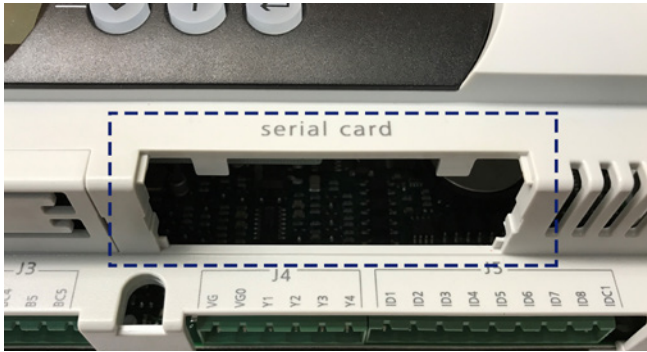
4. Using a needle-nose pliers or similar tool, remove the pre-cut plastic part of the serial card cover, making the hole for the network connector ([Figure 5](#) and [Figure 6](#)).

**Figure 5: Remove Plastic Cover**



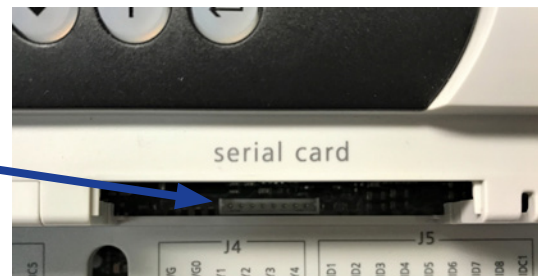
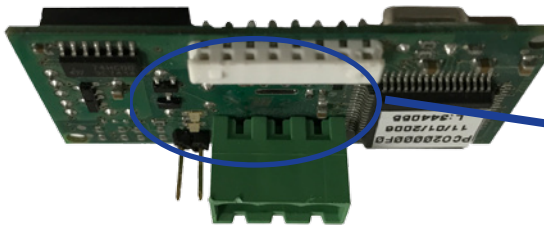


**Figure 6: Serial Card Cover Removed**



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 7](#) shows the serial card slot with the 8-pin plug that mates to the header on the communication module.

**Figure 7: Serial Card Slot Connection**

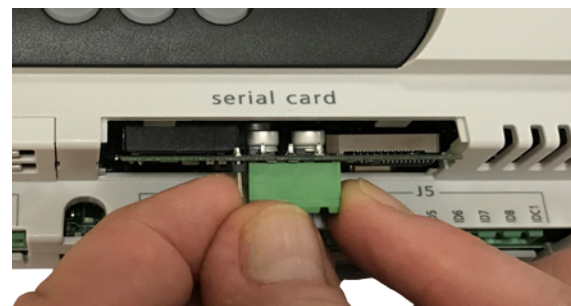


**NOTE:** This operation relies more on fitting the communication module into the connector than seeing the connectors mate.

**Figure 8: Inserting the Communication Module**



**Step 1**



**Step 2**



**Step 3**

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 ([Figure 8](#), Steps 1 and 2).
7. When you feel the connectors align, press the communication module into the plug. Verify that the module is firmly connected ([Figure 8](#), Step 3).
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 9](#)).



**Figure 9: Communication Module Inserted**



10. Insert the network cable connector into the communication module (Figure 10 and Figure 11):
  - a. Connect one wire of the network cable to Pin A of the connector plug.
  - b. Connect the other wire to Pin B of the connector plug. Note that no wire is connected to the GND Pin.
11. Attach the ferrite enclosure (optional - see Figure 12).

## Replacing a Communication Module

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

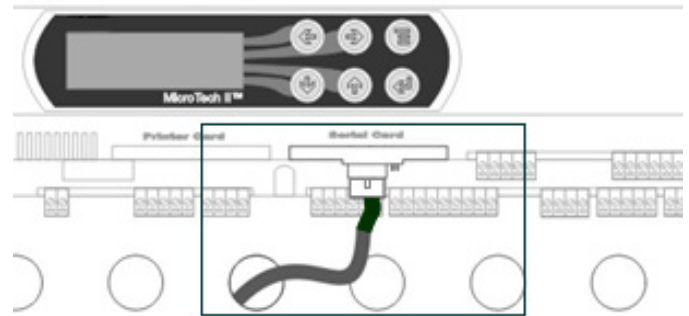
1. Remove power from the unit controller.
2. Locate the serial card slot on the unit controller (Figure 3) and pull the network cable connector from the communication module (Figure 9).
3. Remove the cover from the serial card slot. Use a small screwdriver to carefully pry it off from one end (Figure 4).
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 7 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.

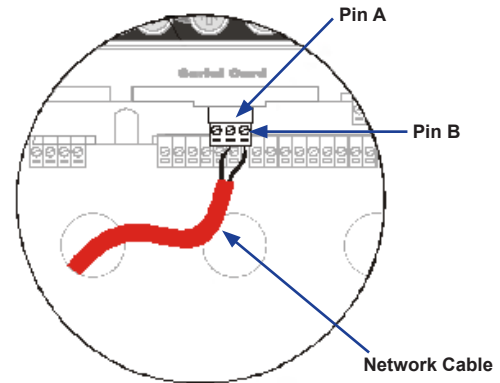
5. Insert the communication module, pointed up, into the slot. Keeping it *level*, roll the module into position as you guide it into the slot, feeling the connectors line up. (Figure 8, Steps 1 and 2).
6. When you feel the connectors align, press the communication module into the connector. Verify that the communication module is firmly connected (Figure 8, Step 3).
7. Replace the cover on the serial card slot. Slip the cover over the network connector plug (Figure 9).
8. Insert the network cable connector into the communication module (Figure 10 and Figure 11):

- a. Connect one wire of the network cable to Pin A of the connector plug.
- b. Connect the other wire to Pin B of the connector plug. Note that no wire is connected to the GND Pin.

**Figure 10: Network Cable Routing and Connections**



**Figure 11: Network Connection Detail**



9. Attach the ferrite enclosure (optional - see Figure 12).

**Figure 12: Ferrite Enclosure**



## Set up the Unit for Network Control

After the LONWORKS communication module has been installed, the next step is to configure the MicroTech II chiller unit controller for integration into a building automation system (BAS). Follow one of the two procedures below to set the LONWORKS network protocol from the MicroTech II chiller unit controller keypad or touchscreen.

### Network Setup for Centrifugal Chillers

1. Disable the chiller. The chiller should not be operating while performing this procedure.
2. At the chiller unit controller keypad display:
  - a. Change the Set/Unit Setpoint menu Protocol = to LONWORKS.

**NOTE:** If using the OITS panel, in the SETPOINTS/MODE screen, set the #9 setpoint = to LONWORKS.

- b. Enter the password of "2001."
- c. As needed in the Set/Unit Setpoint menu, change Source = to Network.

**NOTE:** If using the OITS panel: as needed in the SETPOINTS/MODE screen, change the #3 setpoint, Control Source = to BAS.

3. Re-enable the chiller.
4. Verify that the chiller is operational from the BAS interface.

### Network Setup for all other Chillers

1. Disable the chiller. The chiller should not be operating while performing this procedure.
2. At the chiller unit controller keypad display:
  - a. Set the Protocol = to LONWORKS in the applicable menu screen.
  - b. Use [Table 1](#) to determine the operator password for the specific chiller model.
  - c. Enter the password.
3. As needed in the Set/Unit Setpoint menu, change Source = to Network.
4. Re-enable the chiller.
5. Verify that the chiller is operational from the BAS interface.

Once the protocol has been set, proceed to the next section for LONWORKS addressing details and commissioning instructions.

**Table 2: Password Menu Screen**

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

## LONWORKS Network Addressing

The LONWORKS communication module, together with the unit controller, support the network design, wiring, addressing, and commissioning rules of the LonMark standard.

According to the standard, all device addresses are defined at the time of network configuration. Device addresses have three parts:

1. The Domain ID - designates the domain. Devices must be in the same domain in order to communicate with each other.
2. The Subnet ID - 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.
3. The Node ID - 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 a 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.

Refer to the LonMark Application Layer Interoperability Guidelines Version 3.3, LonMark Layers 1-6 Interoperability Guidelines Version 3.3 ([www.lonmark.org](http://www.lonmark.org)) and LONWORKS FTT-10A Free Topology Transceiver Users Guide ([www.echelon.com](http://www.echelon.com)).

## External Interface File (XIF) and NXE Files

The LONWORKS communication module is self-documenting so that any LONWORKS network management tool can be used for integration and configuration.

An external interface file (a specially formatted PC text file with the extension .XIF) is required, along with a LONWORKS network management tool, so the device can be designed and configured prior to installation.

The NXE file contains the application image that is downloaded into the LONWORKS communication module.

## LonMark Profile Firmware

The LONWORKS communication module firmware translates the Standard Network Variable Types (SNVTs) and Standard Network Configuration Parameter Types (SCPTs) used in the MicroTech II chiller unit controller into the variables and parameters used by the LONWORKS network. The software application conforms to the LonMark 3.3 chiller profile.

## Commissioning

Follow these steps to commission the LONWORKS communication module:

1. Verify the communication module is correctly inserted into the unit controller serial card slot.
2. Connect the twisted pair cable to the communication module's network connector Pins A and B ([Figure 11](#)).
3. Download XIF, NXE, and Resource Files from either [www.DaikinApplied.com](http://www.DaikinApplied.com) or [www.lonmark.org](http://www.lonmark.org).
4. Use a LONWORKS network configuration tool, such as Echelon® LonMaker®, to map the device Neuron ID to the domain/subnet/node logical addressing scheme when it creates the network image, the network address, and connection information.
5. Confirm that the BAS is ready to receive a network device broadcast message.
6. Activate the service pin. Do this by short-circuiting the two pins for an instant using the tip of a screwdriver or similar tool.

At this point, the initialization process begins and the Service LED activates by turning a steady green. Refer to the [Light Emitting Diodes \(LEDs\)](#) section for a detailed description the Service LED and Anomaly LED activity.

## Network Configuration

After the unit controller protocol has been set to LONWORKS and the communication module has been commissioned, the default values of network parameters can be configured to enable control or monitoring of chiller operation via the network. The parameters may be changed from the BAS or the unit controller keypad/display.

If you wish to change default parameter values from the unit controller keypad/display or OITS panel, refer to the MicroTech II Chiller Unit Controller Operation Manual ([Reference Documents](#)) for keypad/display menu options and instructions. Also refer to the MicroTech II Chiller Unit Controller Protocol Document, ED 15062 for descriptions of LONWORKS variables available for BAS integration ([www.DaikinApplied.com](http://www.DaikinApplied.com)).

## Troubleshooting

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

### General

- Review the [Installation and Mounting](#) section of this document to confirm that all procedures were followed correctly.
- If the communication module is installed but the Service LED is not active when the service pin is shorted, remove the module and then follow the steps provided in the [Installing a new Communication Module](#) section. If the issue persists or the Anomaly LED is red, replace the module.
- Verify that Control Source is set to BAS and that the network protocol is set to LONWORKS (see [Set up the Unit for Network Control](#)).

### Network Wiring and Connections

- Check for faulty cable connectors at the chiller unit controller and throughout the network.
- Determine if there is a network ground fault.
- For network terminal connections, twist the wires together a minimum of three times.
- Use only approved cable. Do not use different wire types on the same bus.
- Follow the bus length limits for the cable type.
- Confirm that you have the correct transceiver.
- Make sure 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).

### Bus Terminators

Errors from bus termination can have the following results:

- Signal level too low could indicate the wrong bus terminator or too many terminators.
- Signal level too high could indicate a high-level signal or signal reflections point due to a missing or wrong bus terminator, or that bus terminators are placed incorrectly.
  - Verify that the correct terminators are used based on your network topology.
    - Free topology should have a single 52.3  $\Omega$  bus terminator at busiest point of network.
    - Line topology should have two (2) 105  $\Omega$  bus terminators at both network ends.

### Network Performance

- If network traffic is slow, communication is intermittent, or the trunk is experiencing “noise,” it may be necessary to use a network protocol analyzer or oscilloscope to determine the source of poor performance.
- Confirm power is applied to the unit controller.

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

## Field Replacement and Support

There are two versions of the LONWORKS communication module. The version depends on the model of MicroTech II unit controller (pCO2 or pCO3) installed on the chiller.

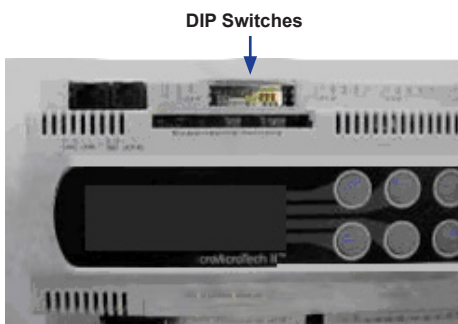
*Daikin Applied no longer offers the pCO2 version of the chiller unit controller or the pCO2 LONWORKS communication module.*

The pCO2 LONWORKS communication module has been obsoleted and replaced by the pCO3 LONWORKS communication module. *The pCO3 LONWORKS communication module is not backward compatible with the pCO2 chiller unit controller.* This means:

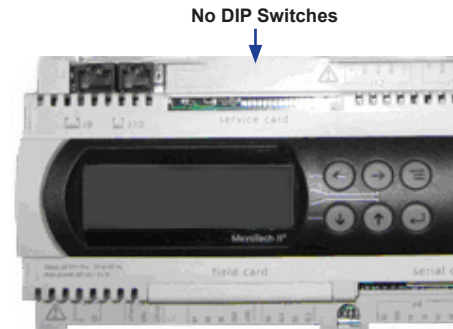
1. If a new LONWORKS communication module needs to be installed on a pCO2 unit controller, both the unit controller and the LONWORKS communication module need to be upgraded to the newer pCO3 version.
2. If an existing LONWORKS communication module needs to be replaced on a pCO2 unit controller, both the unit controller and the LONWORKS communication module need to be upgraded to the newer pCO3 version.
3. To add or replace a LONWORKS communication module on a pCO3 unit controller, order just the pCO3 communication module. It is not necessary to upgrade the pCO3 unit controller if it is functioning properly.

Use the following figures to determine which pCO version of MicroTech II unit controller is installed on the chiller. [Figure 13](#) shows that the pCO2 unit controllers have DIP switches located above the keypad display, while the pCO3 controllers do not have DIP switches ([Figure 14](#)). Refer to [Table 3](#) for Daikin Applied part numbers. Note that the previous LONWORKS communication module field kit numbers have been replaced with a single pCO3 kit number.

**Figure 13: pCO2 Chiller Unit Controller**



**Figure 14: pCO3 Chiller Unit Controller**



**Table 3: Replacement Parts List**

Description	Part Number
MicroTech II LONWORKS Communication Module kit - pCO3 Kit includes: LONWORKS communication module, network connector, ferrite enclosure, and IM 735	332608501 (replaces former PN 350147409)
MicroTech II LONWORKS Communication Module kit - pCO2	332608501 (replaces former PN 350147401)

Contact the Daikin Applied Aftermarket group for chiller unit controller part numbers and ordering information. To find your local parts office, visit [www.DaikinApplied.com](http://www.DaikinApplied.com) or call 800-37PARTS (800-377-2787).



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

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

### ***Warranty***

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

### ***Aftermarket Services***

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

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

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