INSTALLATION OPERATION SUPPLEMENT

LONWORKS TO MODBUS GATEWAYS

PZA model shown

PZAT model shown

DO NOT TURN THE POWER ON TO YOUR NEW LEGACY CHILLER UNTIL THE ENCLOSED COMMISSIONING CHECKLIST HAS BEEN COMPLETED BY A QUALIFIED TECHNICIAN.

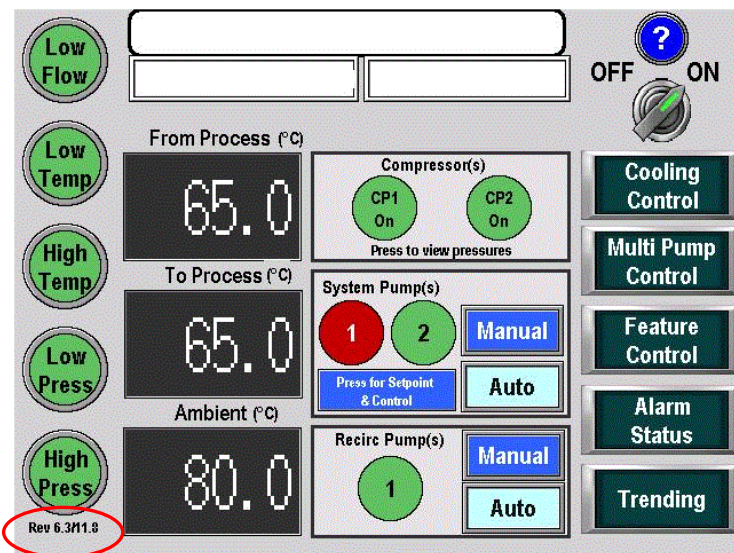## For up-to-date support first try our on-line Knowledgebase
AT: http://www.LegacyChillers.com/kb

Legacy Chiller Systems (USA)
P.O. Box 1120
Diamond Springs, CA 95619

Phone (toll free): 877-988-5464
Fax: 240-214-8303
Web site : www.LegacyChillers.com

IMPORTANT
READ
BEGINNING WORK

- **THIS EQUIPMENT MUST BE INSTALLED BY QUALIFIED PERSONNEL IN ACCORDANCE WITH ALL LOCAL AND NATIONAL CODES.**

- **THE NEW CONTROL FEATURES DESCRIBED IN THIS SUPPLEMENT MAY REQUIRE A FIELD SOFTWARE UPDATE. BEFORE STARTING WORK, PLEASE MAKE A NOTE OF YOUR CURRENT CONTROL SOFTWARE REVISION LOCATED ON THE <u>LOWER LEFT</u> OF THE HOME SCREEN.**

- **IF YOUR CURRENT SOFTWARE REVISION VALUES ARE LOWER THAN 6.3/11.8 <u>STOP</u>, GO: http://www.legacychillers.com/kb/ default~action~detail~intID~280.asp TO DOWNLOAD THE LATEST SOFTWARE AND PRINT OUT INSTRUCTIONS.**

LONWORKS TO MODBUS GATEWAYS
INSTALLATION AND CONFIGURATION

Important!

THIS DOCUMENT IS INTENDED TO PROVIDE INFORMATION ON A NEW FEATURE RECENTLY ADDED TO LEGACY'S CHILLER CONTROL SYSTEM. PLEASE REVIEW ALL INFORMATION IN THIS DOCUMENT BEFORE ACTIVATING THIS FEATURE. FAILURE TO REVIEW AND UNDERSTAND THE INFORMATION PROVIDED IN THIS DOCUMENT CAN RESULT IN PROPERTY DAMAGE, INJURY AND EVEN DEATH.

PRIOR TO STARTING WORK PLEASE MAKE SURE YOUR CHILLER HAS FIELD UPDATED AND IS RUNNING THE LATEST SOFTWARE REVISION. TO GET THE LATEST SOFTWARE FOR YOUR CHILLER GO TO THE LINK BELOW.

http://www.legacychillers.com/kb/default~action~detail~intID~280.asp

FIELD SOFTWARE UPDATE PROCEDURES CAN CHANGE. IT IS HIGHLY RECOMMENDED THAT YOU PRINT AND REVIEW THE ABOVE KB ARTICLE IN ITS ENTIRETY PRIOR TO PERFORMING A SOFTWARE UPDATE. IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT LEGACY TECHNICIAL SUPPORT PRIOR TO COMMENCING WORK.

LONWORKS TO MODBUS GATEWAYS
INSTALLATION AND CONFIGURATION

The following provides information on how field install and configure a LonWorks to Modbus Gateway.

Important information
about our LonWorks to Modbus gateways

1. The Babel Buster 2 LonWorks gateway is manufactured by a third party Legacy Chiller Systems solution provider. Configuration and general support, outside what is provided in this document, is provided by our solution provider. Complete contact information and support procedures are provide within this document.

2. Each gateway provided by Legacy Chiller Systems, is specifically configured for Legacy process chiller products only. This product is designed to operate on IDEC HMI/PLC versions 6.3/11.8 or later. Customers running earlier software versions are recommended to update using procedures references in following pages.

3. DO NOT attempt to perform site network configuration of a LonWorks gateway unless you have in-depth understanding of machine networking specifically, remote operation of process chillers by way of a building automation system.

4. DO NOT attempt to perform gateway network configuration unless you have the ability to set your computers local IP address to communicate on a secondary subnet using a wired connection.

5. Once configured, it is the customer responsibility to test each control point and its operation. Failure to test operation and fully understand changes being made to a chiller operation programming by way of remote LonWorks connection can result in property damage, personal injury and in extreme cases death.

6. Damage or personal injury directly or indirectly caused by chiller control settings after testing at the factory are not the responsibility of Legacy Chiller Systems or Legacy Chiller Systems vendors and are not covered under Legacy Chiller Systems limited warranty.

LONWORKS TO MODBUS GATEWAYS
INSTALLATION AND CONFIGURATION

Section #1 - Gateway installation: If your chiller was shipped with a factory installed LonWorks gateway, you can skip this section and proceed **Section #2** below.

Step #1: Identify the key chiller control components. To the right, you will see a common control configuration.

*Step #2: Mount the DIN rail MOXA network switch. In order to network the LonWorks gateway with the existing PLC and HMI a factory provided MOXA network switch must be installed. Once mounted, field provided and installed 24ga (stranded) power wires must connected between the MOXA switch and the 24vdc terminals of existing power supply.

* If your chiller was not originally shipped with a MOXA network switch or LonWorks gateway additional DIN rail will need to be field installed and mounted.

Step #3: Connect network patch cables to MOXA switch. Each factory provided LonWorks gateway is shipped with one RED network patch cable. Before turning the power to the chiller on the HMI,PLC and LonWorks gateway network patch cables must be connected to the MOXA network switch.

Item #	Description
1	Idec HMI—Touch Screen
2	Line voltage to 24vdc power supply
3	Idec PLC (top item) and I/O modules referred to as the "Control Stack".
4	Pilot relays

Section #2 - Gateway configuration: The following section provides basic information on how to configure your LonWorks gateway for communication on your network.

Step #1: Chiller control PLC/HMI IP addressing. Your chillers default addressing comes from the factory as follows:

> Pentra PLC - IP:192.168.1.5 / Subnet: 255.255.255.0

> HMI Screen - IP:192.168.1.6 / Subnet: 255.255.255.0

STOP - IMPORTANT PLEASE READ

In order to allow network communication on your buildings subnet, the chillers PLC and HMI programs must be updated with static IP addresses that conform to your buildings subnet. When using a BacNet or LonWorks gateway, the buildings IT department generally needs to issue THREE static IP's. Prior to setting up the gateway, these IP's should be issued and confirmed as fully operational. At the present time, Legacy Engineering must provide users with update project files containing IP addressing updates for the IDEC PLC and HMI. Please call 877-988-5464 x 101.

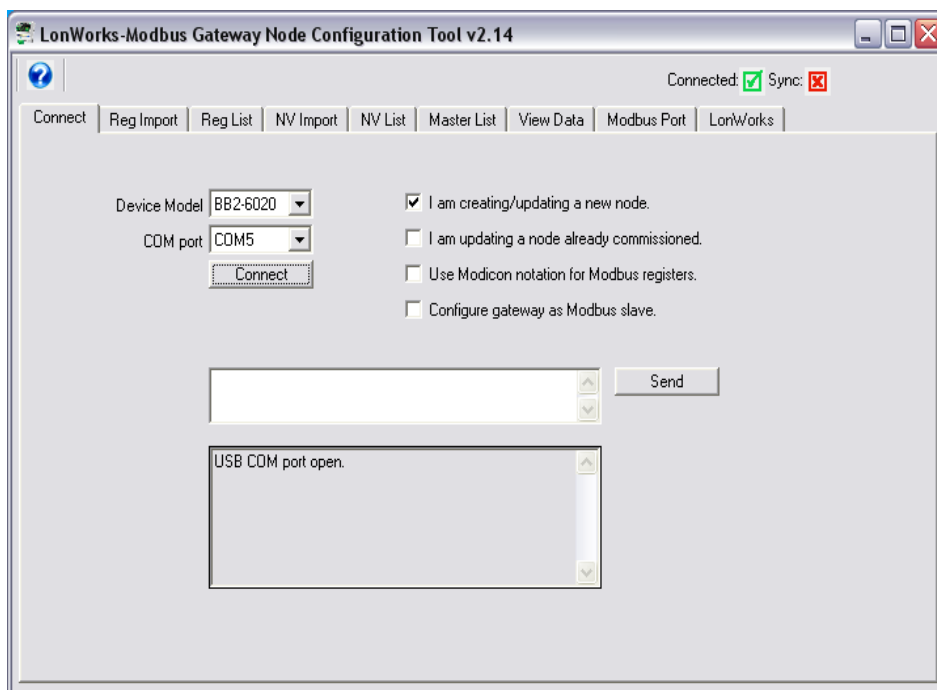# LONWORKS TO MODBUS GATEWAYS
INSTALLATION AND CONFIGURATION

Section #2 - Gateway configuration (continued):

Step #2 - LonWorks configuration notes: Although Legacy ships all gateways pre-mapped to the IDEC PLC's ModBus data registers, additional setup is required to adapt the LonWorks gateway to operate on the customers network. The LonWorks gateway requires interface software to be installed on your PC to perform the final networking setup on the gateway. You will also need a standard USB to MICRO USB cable to make the connection between you PC and the gateway.

Step #3 - Download Gateway software: The gateway programming software is available at no cost on the Legacy Chiller Systems Knowledgebase. Goto: www.LegacyChillers.com, click "Knowledge Base" at the upper right of the screen, in the search box enter "Networking - LonWorks to Modbus Gateways" and click search. Towards the bottom of the article look for a link called "LonWorks Gateway Configuration Software". Please click this link and download and install software. Note: Within the zip file you will also find instructions on installation and use of software.

Step #4 - Connecting the gateway to your PC: Once you have installed the "LonWorks-Modbus Gateway Node Configuration Tool" please connect your PC to the gateway using a USB to MICRO USB cable. In most cases, you should hear the customary Window's ping indicating that a USB connection has been established. NOTE: In some cases, Window's may provide a popup asking your to load the drivers needed to communicate with the Gateway. Should this happen, you will find the drivers inside the "BB2-LON Support CD" that you downloaded in Step #3 above

Step #5 - Opening the "Gateway Node Configuration tool": Look for a link "BB2-LON" on your desktop and click. Once the program opens you will see a connection page as illustrated below. In the "Device Model" section select the "BB2-6020" using the dropdown. In the "COM port" section select the com port you are using to connect to the gateway. Next click connect. Once the configuration tool has made connection you should see "USB COM port open." in the shaded box. This is your confirmation that the tool is communicating with the gateway.

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LONWORKS TO MODBUS GATEWAYS
INSTALLATION AND CONFIGURATION

Section #2 - Gateway configuration (continued):

Step #6 - Configuring the LonWorks gateway: Once you have installed your IDEC PLC/HMI program updates that have set the IP addresses of those devices on your subnet, its time to update your LonWorks gateway to communicate on your network. Fortunately, there is only one place on the gateway you need to update to get everything talking. Follow these steps to complete update your gateway IP address settings:

A. Click the Modbus tab on the configuration tool. Just below the "Read Device" and "Write Device" buttons there is a section to change the gateway to your desired network settings.

B. Click read to bring in the current IP settings from the device.

C. In the "IP Address" field you will see the gateway's current default address of 192.168.1.7. This section must be changed to your desired static settings.

D. Below the LonWorks gateway IP settings you will find a table. On the first line of this table you will see the IDEC PLC's default IP address if 192.168.1.5. Double click on this line and enter the new IP address of your chillers PLC.

E. Click Write. Your gateway is now configured for your network.

If you have any problems with your Gateway configuration, please proceed to the following page.

LONWORKS TO MODBUS GATEWAYS
CONFIGURATION SUPPORT

Should you need support configuring your LonWorks Gateway

Legacy Chiller Systems has preconfigured and tested your LonWorks gateway to communicate with the IDEC PLC. As part of this configuration, we have provided access to key PLC data registers allowing for monitor and control of the chiller. Once logged into the gateway, the user has full access to its configuration and has full responsibility to correctly set up the device to communicate on the host network. Should the gateways default programming be damaged, please contact Legacy Chiller Systems M-F between the hours of 8AM - 4:30PM and request a copy of the default gateway XML files. Our toll free number is: 877-988-5464.

For all questions pertaining to the gateway network configuration or use of configuration tool, please contact our vendor direct. When calling, please have the LonWorks gateway's model and serial number.

Control Solutions, Inc.
980 Berwood Ave, Suite #100
White Bear Lake, MN. 55110
651-426-4410

In addition to phone contact, support can be requested 24-7 by way of submitting a support ticket. You can submit a new ticket or check status on an existing ticket at: www.csimn.com/ticket/