



INSTALLATION OPERATION SUPPLEMENT

BACNET 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.**

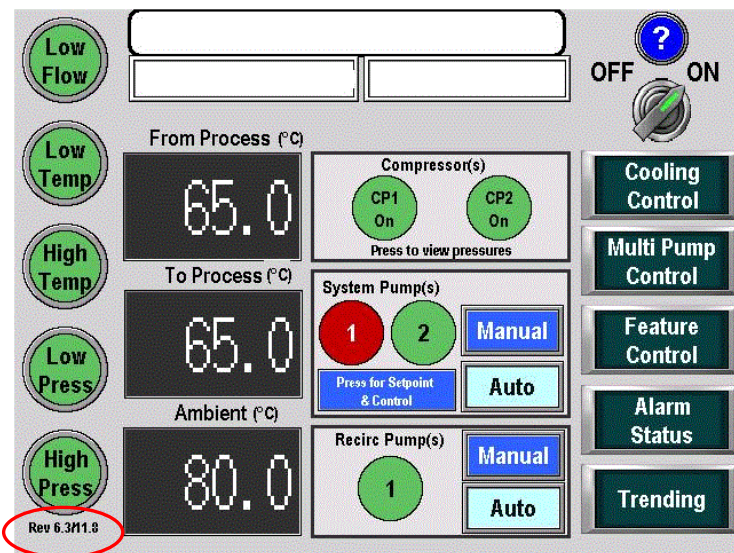
For up-to-date support first try our on-line Knowledgebase
AT: **<http://www.LegacyChillers.com/kb>**

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

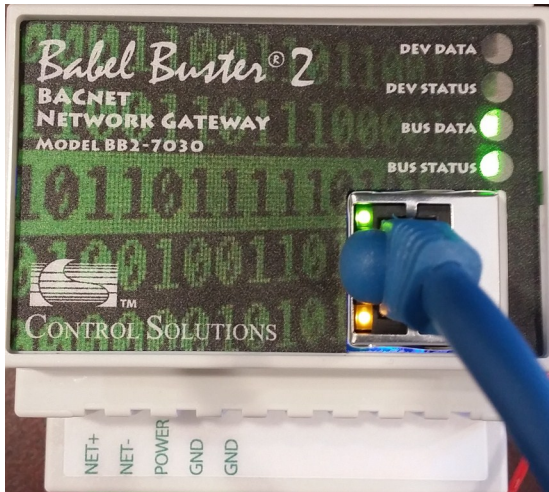
Phone (toll free): 877-988-5464
Fax: 240-214-8303
Web site : www.LegacyChillers.com

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



BACNET 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 TECHNICAL SUPPORT PRIOR TO COMMENCING WORK.

BACNET TO MODBUS GATEWAYS INSTALLATION AND CONFIGURATION

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

Important information about our BACnet to Modbus gateways

1. The Babel Buster 2 BACnet 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 BACnet 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 BACnet 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.

BACNET TO MODBUS GATEWAYS INSTALLATION AND CONFIGURATION

Section #1 - Gateway installation: If your chiller was shipped with a factory installed BACnet 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 BACnet 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.

***Step #3:** Mount the DIN rail BACnet gateway. Once mounted, field provided and installed 24ga (stranded) power wires must connected between the BACnet gateway and the 24vdc terminals of existing power supply.

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

Step #4: Connect network patch cables to MOXA switch. Each factory provided BACnet gateway is shipped with one RED network patch cable. Before turning the power to the chiller on the HMI, PLC and BACnet 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 BACnet 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. At the present time, Legacy Engineering must provide users with update project files containing IP addressing updates. Please call 877-988-5464 x 101.

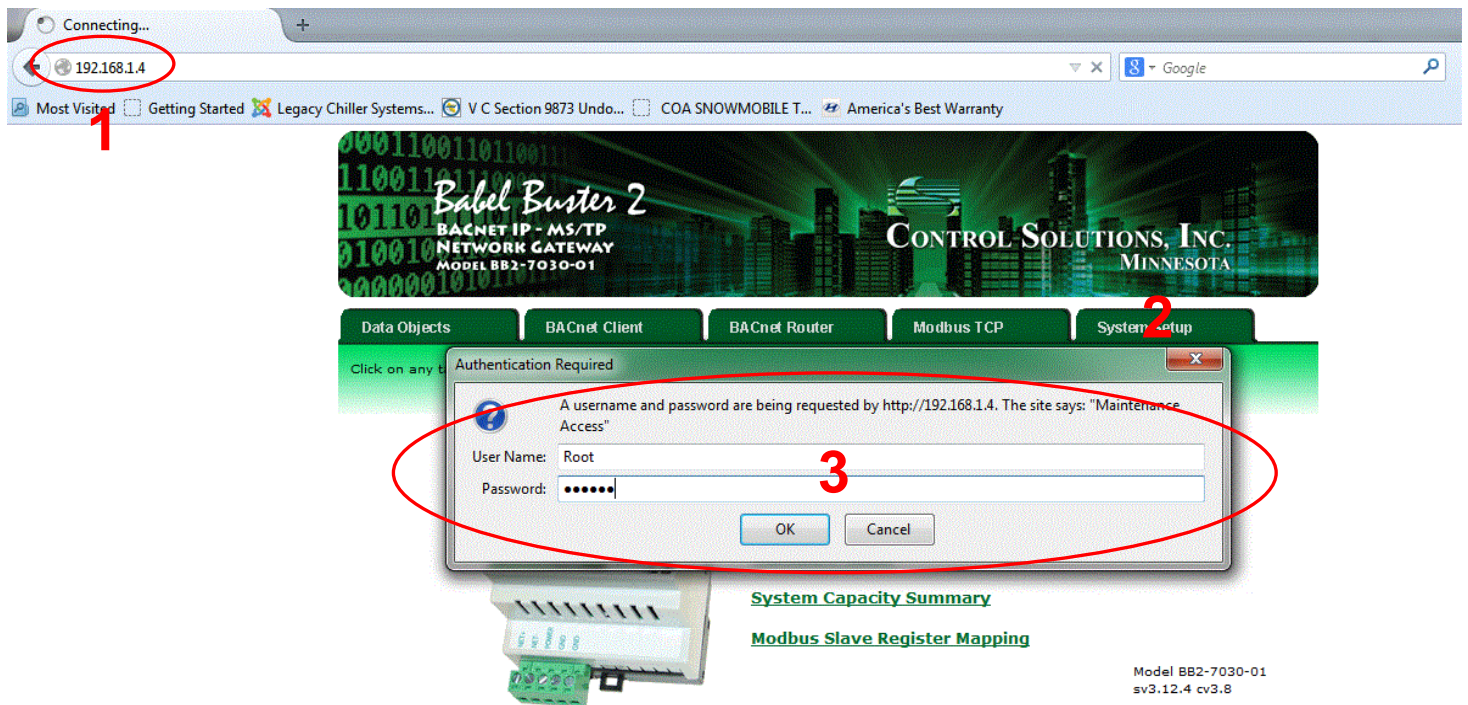
BACNET TO MODBUS GATEWAYS INSTALLATION AND CONFIGURATION

Section #2 - Gateway configuration (continued):

Step #2 - BACnet gateway IP addressing: Your BACnet gateway can be field programmed to your networks subnet using device hosted client software and a standard Internet Browser. The latest version of Firefox or Chrome seem to work the best. In order to connect to the gateway, you must place your computer on the same subnet as the gateway. If you are not sure how to re-configure your computer for an alternative subnet IP address, please contact your network administrator. By default, your BacNet gateway is programmed to the following IP addressing - IP: 192.168.1.4 / Subnet: 255.255.255.0

Step #3 - Configuring the BACnet gateway: The following section contains screen shots with text instructions. We have found that it's most efficient to perform your subnet address programming prior to installation in the chiller.

IMPORTANT: At the end of this section, we have provided contact information and procedures should you need additional configuration support.



> 1 - Open your Internet browser and enter 192.168.1.4

> 2 - Click on the "System Setup" tab.

> 3 - Each time the unit is power cycled and you click on the System Setup tab, the above login box will appear. The default username is "root" and the password is "buster". Note, username and password are both lower case.

Next Page Please

BACNET TO MODBUS GATEWAYS INSTALLATION AND CONFIGURATION

This page allows you to change this device's IP address, and select whether double registers are swapped when returned to a remote client accessing this server.

IP Address	<input type="text" value="192.168.1.4"/>	192.168.1.4	<input type="button" value="- Refresh -"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>	255.255.255.0	<input type="button" value="Change IP"/>
Gateway	<input type="text" value="0.0.0.0"/>	0.0.0.0	
HTTP Port	<input type="text" value="80"/> (default 80)		<input type="button" value="SetPort"/>

> 1 - Once logged in, click on the “Setup” tab.

> 2 - Next click the “Local Host” tab.

> 3 - Next update the IP Address, Subnet Mask, Gateway and HTTP Port settings to accommodate your subnet.

> 4 - Next, click the “Change IP” button. Note: At this point, you should close down your browser session, open a new session, clear your browser cache, update your computers network settings and log in using your updated IP address. **IMPORTANT** - In order for the above changes to take effect, you must power cycle the device. Once you perform a power cycle, you will need to update your computers subnet IP and repeat the device login steps.

This page displays BACnet IP port settings.

BACnet IP Settings:

Device Instance	<input type="text" value="20800"/>	Local Network Settings
Port (default 0xBAC0 = 47808)	<input type="text" value="47808"/>	<input type="button" value="Save"/>
Device Description	<input type="text" value="Legacy Chiller Systems_Process Chiller"/>	
Device Location	<input type="text" value="USA"/>	
Analog Input Object Limit	<input type="text" value="10"/>	Analog Output Object Limit
Binary Input Object Limit	<input type="text" value="20"/>	Analog Value Object Limit
Multistate Input Object Limit	<input type="text" value="1"/>	Binary Output Object Limit
		Binary Value Object Limit
		Multistate Output Object Limit
		Multistate Value Object Limit

> 1 - Once logged in, click on the “System Setup”, “Setup” and then “BACnet IP Port”.

>2 - If your network requires a non-standard BACnet port, insert your port number in the “Port” box.

>3 - Click “Save”

BACNET TO MODBUS GATEWAYS CONFIGURATION SUPPORT

Should you need support configuring your BACnet Gateway

Legacy Chiller Systems has preconfigured and tested your BACnet 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 network configuration, please contact our vendor direct. When calling, please have the BACnet 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/