Quick Start Guide

502-050A

LCI3 Local Control Interface

SUPERSEDES: New

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QUICK START GUIDE

The *iWorx® Local Control Interface Quick Start Guide* provides simplified application information for the Local Control Interface Controller. The Guide is designed as a supplement to the *Application Guide* and is not intended as a substitute for it.

The reader should understand basic HVAC concepts, intelligent environmental control automation, and basic LONWORKS networking and communications. This Application Manual is written for:

- Users who engineer control logic
- Users who set up hardware configuration
- Users who change hardware or control logic
- Technicians and field engineers of Taco Electronic Solutions, Inc.

APPLICABLE DOCUMENTATION

See the table below for additional documentation that may be applicable to this controller.

Description	Audience	Purpose
iWorx® LCI3 Installation Guide, Document No. 502-002	– Application Engineers – Installers – Service Personnel – Start-up Technicians – End user	Provides detailed instructions for installing and troubleshooting the iWorx® Local Control Interface.
iWorx® LCI3 Application Guide, Document No. 505-050	– Application Engineers – Installers – Service Personnel – Start-up Technicians – End user	Provides detailed instructions for installing, configuring, and operating the iWorx® Local Control Interface.
http://www.iWorxWizard.com	– Application Engineers – Wholesalers – Contractors	An on-line configuration and submittal package generator based on user input. Automatically generates bill of materials, sequence of operations, flow diagrams, wiring diagrams, points and specifications.
Additional Documentation	*LonWorks FTT-10A Free Topology Transceiver User's Guide,* published by Echelon Corporation. It provides specifications and user instructions for the FTT-10A Free Topology Transceiver. See also: www.echelon.com/support/documentation/manuals/transceivers.	

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OVERVIEW

The Local Control Interface is a touch screen graphical user interface that serves as the command center for the iWorx® control network. It features remote access capability via Ethernet (World Wide Web or LAN), and an SD Card input for future control expansion, product upgrades, or archiving of the databases on the Local Control Interface for backup/restore purposes.

GETTING STARTED

The Local Control Interface screen may be in a sleep mode when accessed. To activate the screen, simply press on the screen anywhere. The Local Control Interface now displays the following:

Password Entry

Using a stylus or fingertip, press the empty box beside "Enter Password". A keyboard screen with alphanumeric characters appears.

The Default Password is **LCI3**.

To enter the password:

1. Press the letters **L C I** and the numeral **3** on the keyboard. This sequence provides the default password access.
2. Next, Press **SAVE**.

The display reverts to the Local Control Interface start page displayed above, with the addition of the password now displayed in the data entry box.

Press **ENTER** on the Local Control Interface keyboard.

NOTE: If you are accessing the Local Control Interface remotely, do not press the **Enter** key on your computer. Instead, click the Enter button using the mouse.

Home Screen

You now see the Main Local Control Interface Home Screen Menu:

In the upper right hand corner, you see two buttons that say **Prev** and **Home**. Think of these keys as you would the "Back" button and "Home" button on your web browser. You can revert to the Home Screen at any time by pressing the **Home** button. To view the screen that you were working on previously, press the **Prev** key.

Auto Log Off Feature

The Local Control Interface has an auto log off feature. If no keys have been pressed within a programmable amount of time after log on (factory default is ten minutes), the Local Control Interface automatically logs off. To re-access the Main Menu, simply repeat the instructions for "Password Entry" above.

Entering Time and Date

If the Local Control Interface has not been commissioned yet, you will need to enter the correct time and day. Remember that the Local Control Interface uses a military (24 Hour) time format. For example, 5:00 PM should be entered as 17:00. If the Time and Date have been entered, go to the next section, "Selecting Controllers".

To Enter the Time and Date:

1. Press the **Utilities** button on the Main Menu. You now see a button labeled **LCI Setup**.
2. Press the LCI Setup button.
3. You now see buttons for **Time** and **Date**. Press the **Date** Key.
4. Enter the correct Year, Time and Date. When you enter time, enter Hours first, press **Save** and then enter minutes. Remember that the display uses a 24-hour format.
5. If you are in a Daylight Savings Time Zone, Press the **Daylight Savings** button.

NOTE: You must press **Save** after *each* entry to save your selection.

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CONFIGURING ETHERNET COMMUNICATION

Summary

There are three basic LCI3 Ethernet configuration types which may be required for Ethernet communication. These configurations types are Ethernet with Crossover cable, Intranet, and Internet.

This section provides quick start instruction for setting up each configuration type.

- Configure the LCI3 to communicate to a PC using a cross-over cable
- Configure the LCI3 to communicate to PCs on an Intranet.
- Configure the LCI3 to communicate to PCs on the Internet.

NOTE: The LCI3 is capable of communicating to other LCI3s and may also send e-mail via the ethernet. Those applications are addressed in another section of this document. In addition, these procedures are intended for individuals who are experienced with PC's and routers.

Using a cross-over cable from a PC

The following procedure may be used to allow a PC to communicate to an LCI3 using a cross over cable. In this case, the PC and LCI3 must both reside on the same network and therefore must have the same subnet address. This example uses Windows 7 as the operating system. Please refer to the PC user manual or IT technician if setting up with a different operating system.

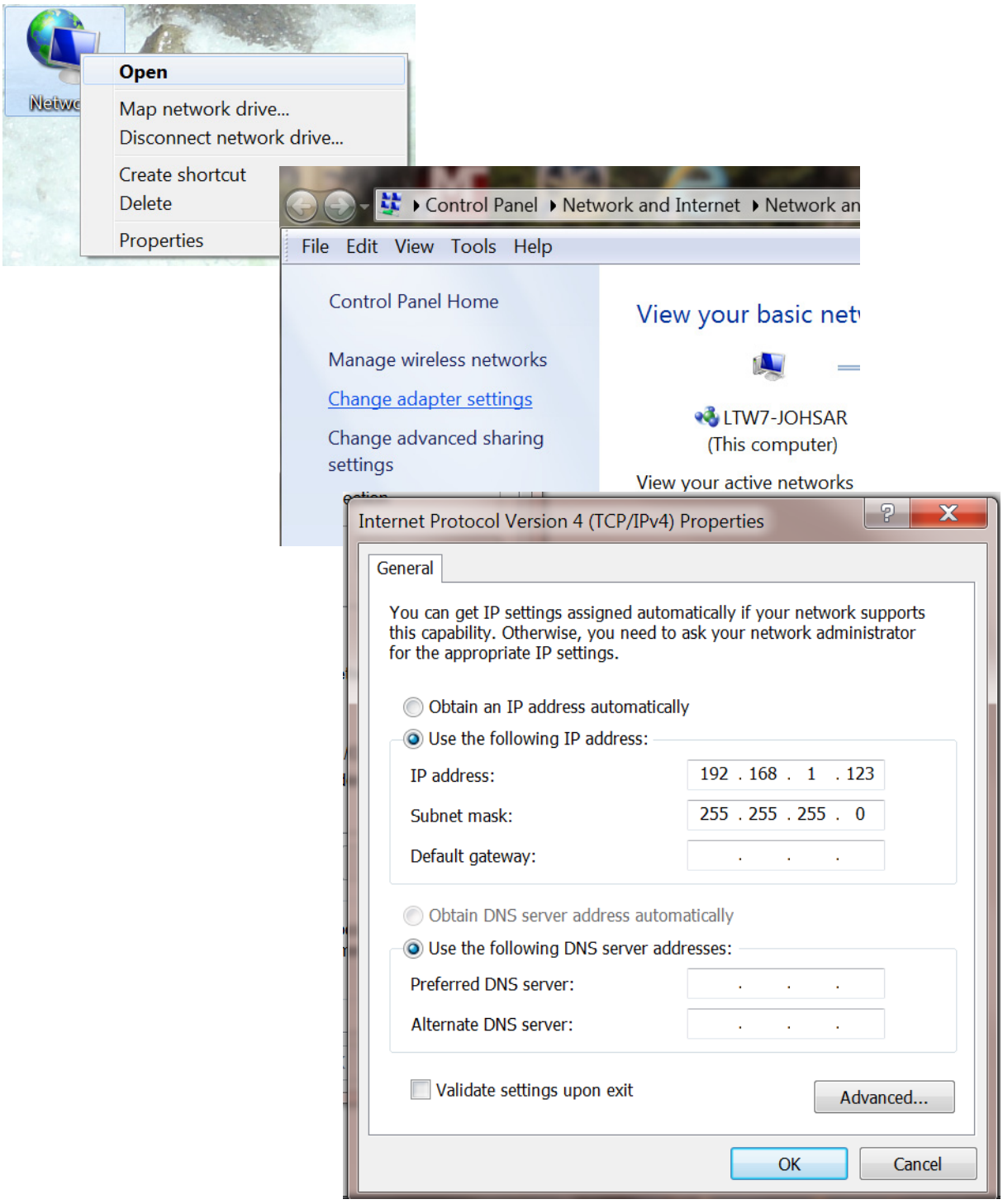
Procedure

1. Determine the PC's IP address and subnet address; See also Figure 1 for Windows appearance.
   - Right click on the "Network" icon on the PC's desktop. Choose **Properties**.
   - Choose **Change Adaptor Settings**.
   - Right click on **Local Area Connection** and choose **Properties**.
   - Click on **Internet Protocol Version 4 (TCP/IPv4)** and select **Properties**.
   - Note the IP and Subnet address
2. Now that the PCs address and subnet are known the LCI3 can be configured by doing the following.
   - Sign-on to the LCI3
   - Select 'Utilities' from the Home screen
   - Select 'Network Setup' from the Utilities screen
   - Select 'Ethernet Settings' from the Network Setup screen
   - Set 'Enable DHCP' to NO
   - Enter an IP address for the LCI3: This address should be the same as your PC with the last number being different. Example: PC: 10.0.1.59 --> make the LCI3 10.0.1.60
   - Enter the same subnet as your PC
   - Depress 'Save'

3 To establish communication perform the following.

- Connect the cross-over cable to your PC and the LCI3
- Launch Internet Explorer or your preferred web browser
- Type the following in the address line:
  http://10.0.1.60/lci3/firstpage
- The LCI3's sign-on screen should now be displayed on the PC screen.

Figure 1: IP Configuration on Microsoft Windows 7



Configuring Intranet Communications

The following procedure may be used to allow the LCI3 to communicate to all PC's on the same network (i.e. in the same building with no external communications). In this case, the PC's and LCI3 must all reside on the same network and therefore must have the same subnet address. This example uses Windows 7 as the operating system. Please refer to the PC user manual or IT technician if setting up with a different operating system.

Procedure

1. Determine the PC's IP address and subnet address; See also Figure 1 for Window appearance.
   - Right-click on the **Network** icon on the PC's desktop. Choose **Properties**.
   - Select **Change Adaptor Settings**.
   - Right-click on **Local Area Connection** and choose **Properties**.
   - Click on **Internet Protocol Version 4 (TCP/IPv4)** and select **Properties**.

     NOTE 1: Please note the IP and Subnet address

     NOTE 2: If there is an IT department the information can be obtained from them and they will also provide you with an IP address that can be used for the LCI3.

     NOTE 3: All devices on the network must have a unique IP address.
2. Now that a PC's address and subnet are known or have been provided by the IT department, the LCI3 can be configured by doing the following.
   - Sign-on to the LCI3
   - Select 'Utilities' from the Home screen
   - Select 'Network Setup' from the Utilities screen
   - Select 'Ethernet Settings' from the Network Setup screen
   - Set 'Enable DHCP' to NO
   - Enter an IP address for the LCI3: This address should be the same as a PC with the last number being different. Example:

     PC 10.0.1.59 --> make the LCI3 10.0.1.60. The address may also be obtained from the IT department.

     NOTE: All devices on the network must have a unique IP address.
   - Enter the proper subnet as found on the PC or as provided from the IT department
   - Depress 'Save'
3. To establish communication perform the following.

From a PC on the network, launch Internet Explorer or your preferred web browser

Using the IP address from step 2, type the following in the address line: http://10.0.1.60/lci3/firstpage

The LCI3s sign-on screen should now be displayed

Configuring Internet (WWW) Communications

The following procedure may be used to allow the LCI3 to communicate to any PC on the internet. The router referenced in the example is a LinkSys router, default router addresses and settings may vary based on the router manufacturer.

Procedure

1. This example assumes that the router has already been installed and connected to the Internet and is functioning properly.
2. Connect the LCI3 to the network that the router is also connected.
3. Verify the LCI3 obtained the IP addresses automatically from the router.
   - Sign-on to the LCI3
   - Select 'Utilities' from the Home screen
   - Select 'Network Setup' from the Utilities screen

- Select ‘Ethernet Settings’ from the Network Setup screen
- Verify ‘Enable DHCP’ is set to Yes
- If set to NO, set to Yes and ‘Save’. Now Verify an IP address has been automatically placed in the following fields; IP address, Subnet mask, Default Gateway, Primary DNS, Secondary DNS and External Gateway.
- Now that the IP addresses have been automatically set, disable DHCP (Set to NO). By setting this to “NO” the LCI3 can always be accessed from the internet using this address.

4. Configure the router so the LCI3 can be accessed from the www
   - Launch Internet Explorer or your preferred web browser
   - Type http://192.168.1.1 in the address line and then press ‘enter’
   - Enter the router password
   - Select the ‘Application and Gaming’ tab. Other routers may have a ‘Setup’ or ‘Port Forwarding’ tab.
   - Using one of the unused entries fill in the following information fields
     - Application=LCI3
     - Start=80
     - End=80
     - Protocol=TCP
     - IP address=enter the external address as found in LCI3 or as supplied by an IT professional
     - Enable=check the box and then save.

LCI3 QUICK-START ISP ETHERNET SET UP

Summary

Before beginning, please ensure that the LCI3 can be accessed by using the Internet. If the LCI3 has not yet been configured for remote communications via the Internet please reference “Configuring Ethernet Communication” on page 5.

This section provides LCI3 Quick-start ISP setup instructions. It explains how to:

- Configure the LCI3 to communicate to an ISP
- Configure the LCI3 to send alarms via email
- Configure the LCI3 to selectively send emails

NOTE: This section assumes that the LCI3 is already connected to the Internet.

Configuring an Email Proxy

The following procedure should be used only when there are multiple LCI3 controllers on the network, to configure them to send all alarms through a single LCI3 controller. Disregard this section if there is only one LCI3 on the network.

Procedure

1. The following information is either chosen by you, your customer or provided by the ISP.
   - Proxy Emailer – If multiple LCI3s are networked together and alarms are to be tunneled to a single LCI3 for emailing, enter the LCI3s IP address or Site name in this field. This field is left blank if there are not multiple LCI3s on the network.
2. The information field described in step 1 needs to be entered into the LCI3. To enter the information perform the following.
   - Sign-on to the LCI3
   - Select ‘Utilities’ from the Home screen
   - Select ‘Network Setup’ from the Utilities screen
   - Select ‘Email Parameters’ from the Network Setup screen
   - All fields with the exception of Proxy Emailer need to have valid information entered

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- Depress ‘Save’

Configuring the Email addresses

The following procedure should be used to enter the email addresses into any LCI3 that is desired to send alarm emails.

Procedure

Determine who should receive the emails and follow the procedure below to enter the addresses into the LCI3.

- Sign-on to the LCI3
- Select ‘Utilities’ from the Home screen
- Select ‘Network Setup’ from the Utilities screen
- Select ‘Email Addresses’ from the Network Setup screen
- The ‘From’ field needs to contain the email address that is associated with the Username and Password that the LCI3 uses to gain access with the ISP.
- Enter the email address for the Recipient
- Optional; Enter the email address for the CC Recipient
- Optional; Enter the email address for the Bcc Recipient
- Depress ‘Save’

Configuring selected alarms to be emailed

The following procedure should be used to select the alarms that will be emailed. Most often the alarms that are selected are critical in nature and require immediate attention. Some examples of critical alarms are; Fan Failure, Mixed Low limit (freeze condition), Smoke detection and Communication failures to name a few.

> **NOTE:** All alarms are enabled by default. Alarms need not be disabled if controllers are not installed that support the alarm.

Procedure

1. Determine which alarms you would like to have annunciated to the email addresses previously entered.
   - Sign-on to the LCI3
   - Select ‘Utilities’ from the Home screen
   - Select ‘Network Setup’ from the Utilities screen
   - Select ‘Alarms to Email’ from the Network Setup screen
   - Once in the ‘Alarm Email Setup’ screen use the ‘Next, Prev, Top and Bottom’ buttons to navigate to all available alarms
   - All alarms are enabled by default
   - Click on the alarm to disable it from being emailed

SELECTING CONTROLLERS

To enter the correct settings for a controller, it must first be part of your control network. When you press the **Controller** button, all of the properly-commissioned controllers on your network will be shown.

If the controllers appear when you press **Controller**, proceed to the next section, ”Adjusting Controllers”.

If no controllers appear when you press **Controller**, then you must introduce the controllers onto the network.

To place a controller on the network:

1. A service switch is located on the top left side of each controller. To access the switch, a small non-conductive object may be used to momentarily close the switch by inserting it into the slot of the enclosure. Alternatively, the switch may be accessed by removing the cover. After the switch is pressed, the LCI3 beeps once to indicate a new controller has successfully been added to the network. It may be now viewed at the LCI3's controller screen.
2. Repeat this process for every controller on the system.

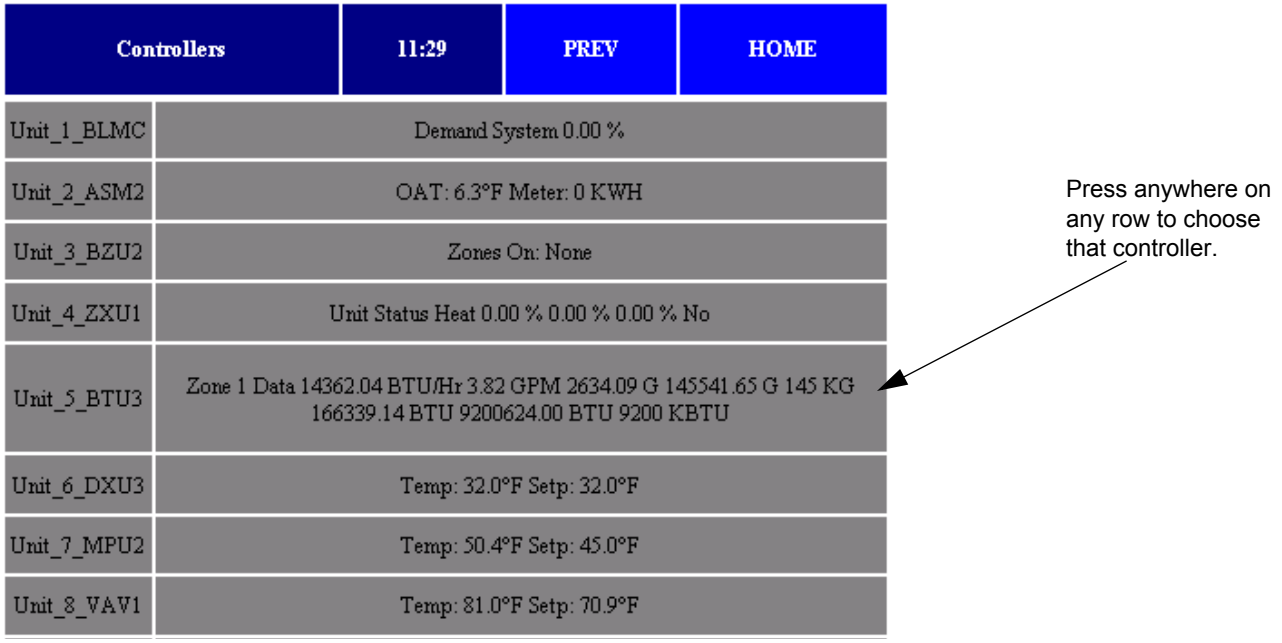
You now see every controller on your network when you press **Controllers** on the Local Control Interface.

ADJUSTING CONTROLLERS

You can configure any controller on the network from the Local Control Interface. Keep in mind that controllers may also be renamed and may actually describe the equipment being controlled. For example: Second Floor, First Floor, Kitchen, and so on.

To program a controller from the Local Control Interface:

1. Press the **Controller** key. The Local Control Interface displays a list of the controllers on the network, as shown below. If there are more controllers than can be displayed on one screen, click **Next** at the bottom of the display to show more controllers.



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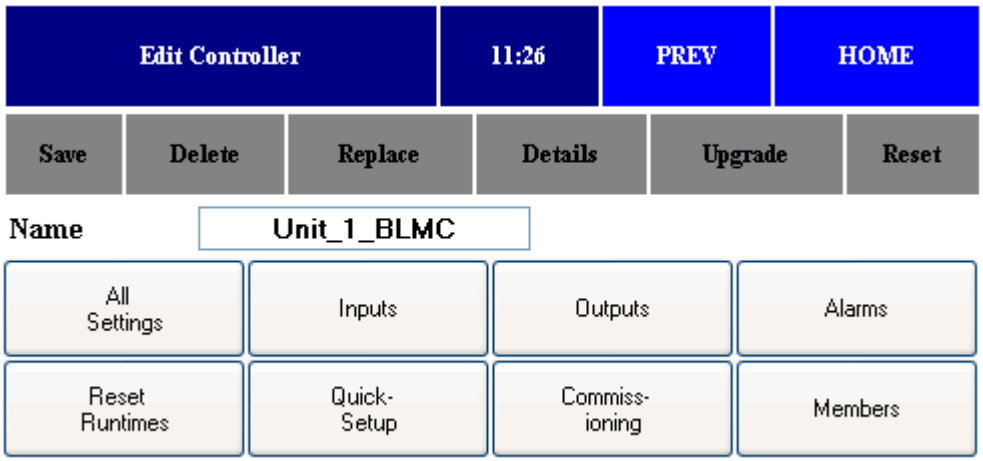
2. Press the controller you want to program. For example, press **Unit_1_BLMC** to choose that controller. The screen now displays settings for the controller that you have selected.
3. Depending on the controller you have selected, the menu for that particular controller has a number of buttons. Since most controllers are similar in format, the controller selected will look like the controller shown below.



Paste

You can select like controllers and **Paste** the settings from any one unit to those selected controllers.

ADJUSTING ROOM TEMPERATURE SETTINGS

Listed in the following section are controllers that allow room temperature setpoints to be adjusted. To learn how to adjust temperatures, read the instructions for the controller that you have selected.

> **NOTE:** Temperature adjustments made by end-users/building occupants should always be made at the thermostat or wall sensor, not the Local Control Interface!

Scheduling Occupancy for the Controllers

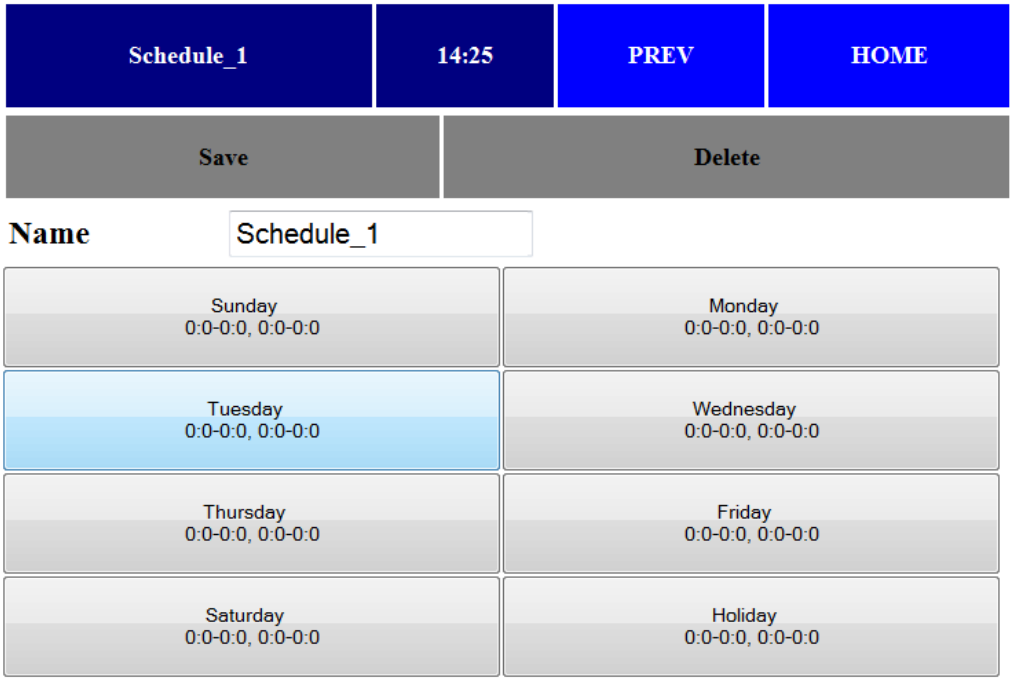
When any controller is first placed on the network, it operates in *Unoccupied Mode* and to its unoccupied setpoints. The Local Control Interface acts as the time keeper on the network and therefore communicates occupancy to the controllers based on the occupancy schedule they are associated with. The Local Control Interface can oversee up to 16 different schedules as well as 16 different groups in order to define different areas in the building. A controller can be part of ONE of these groups.

In order for a controller to operate in *Occupied Mode*, it must be part of a group and that group must have a valid schedule. In the steps below, you will create a schedule and a group.

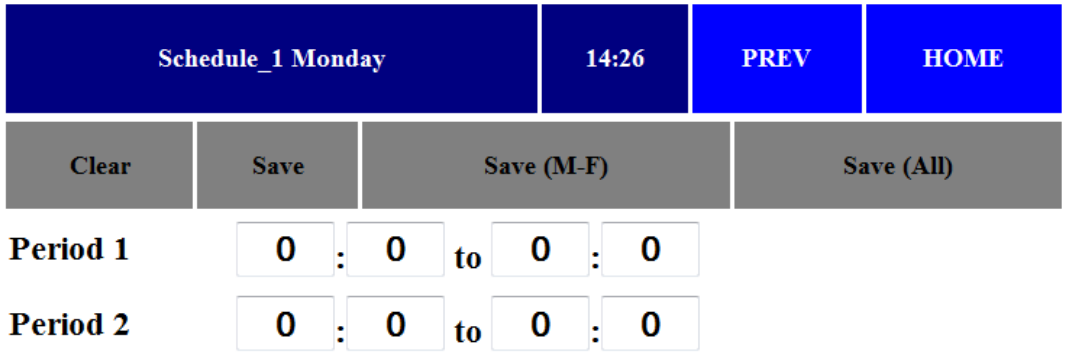
Creating a Schedule

To create a schedule, follow these steps:

1. From the Home screen, press **Schedules**.
2. Press **Add New**.
3. “Schedule_1| Unoccupied” is displayed.
4. Press **Schedule_1**.
5. The following screen appears



6. Press **Monday** and the following appears.



7. The above periods are in the format Hour:Minute to Hour:Minute
8. Select the Starting hour in Period 1 that you want to adjust by pressing the “hour” area where “0” is shown.
9. The keypad appears to allow you to set the Hour value.
10. Press **CLR** to empty the box.
11. Key in the desired Hour in military format (that is, key in “17” for 5 o’clock PM).
12. Press **SAVE**.
13. Repeat the steps for remaining schedule times, remembering to press **SAVE** after every entry.

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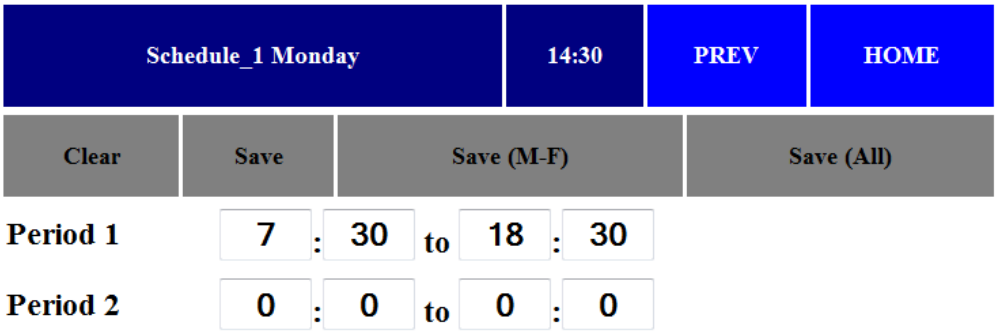
14. Once all times are entered, the schedule should look as follows.



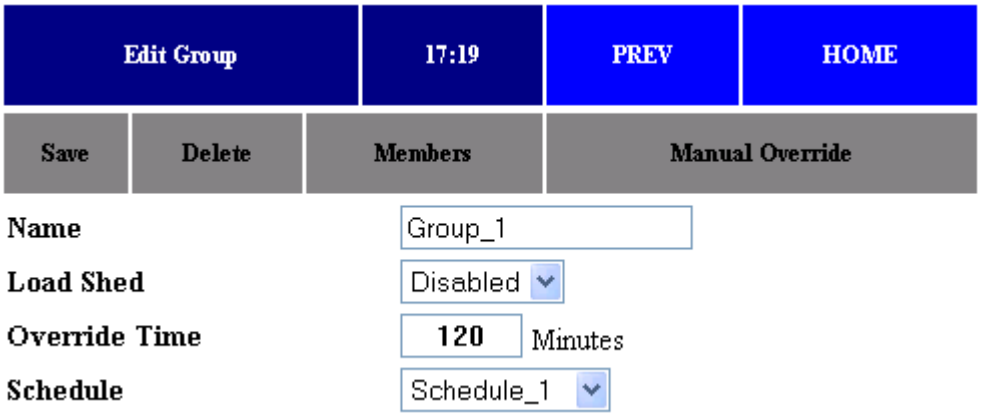
15. There are several options for saving. If you press **`Save (M-F)`**, the schedule is saved for Monday through Friday. If you press **`Save`**, only the individual day gets saved. If you press **`Save (All)`**, the settings are saved for all days of the week.

Creating a Group

A group is a collection of controllers sharing a common schedule. In other words, a group allows you to choose a single schedule to be associated with multiple controllers.

To create a group, follow these steps:

1. On the Home screen, press **`Groups`**.
2. Press **`Add New`**.
3. **`Group_1 | Unoccupied`** is shown.
4. Press **`Group_1`**.
5. The following screen appears.



6. Press **Members** and press the controllers you wish to be associated to this group. Associated controllers appear in red as shown below.

Group_1 Members	17:21	PREV	HOME
Unit_1_BLMC	Not associated		
Unit_2_ASM2	Not associated		
Unit_3_BZU2	Group: Group_1		
Unit_4_ZXU1	Group: Group_1		
Unit_5_BTU3	Not associated		

7. Now press **Prev** so the original group screen is displayed.
8. Press the schedule box and then press the specific schedule you would like the controllers in the group to follow (for example, “Schedule_1”).
9. Press **Save**.

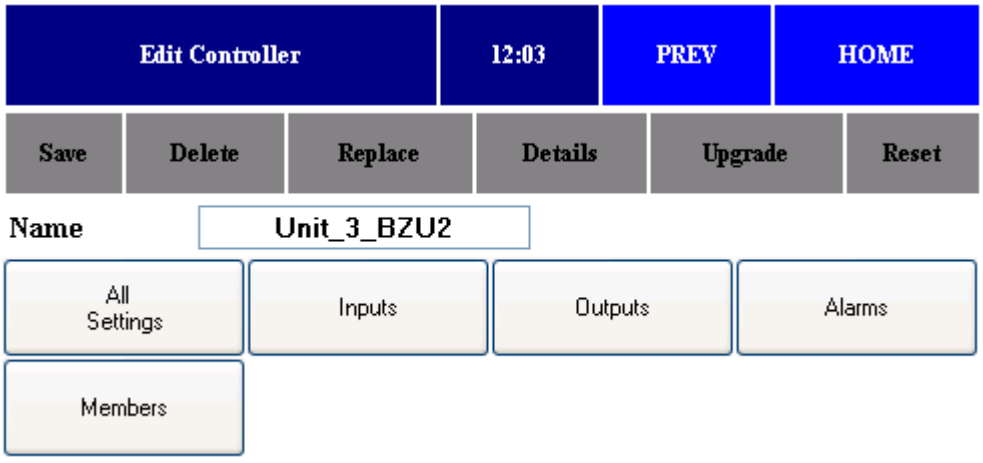
BZU

What it does:

The BZU controller is used as a zoning control in conjunction with a BLM Series boiler operating control. The BZU can control up to 5 zones of heating. The BZU can also provide temperature information for cooling when used in conjunction with a DXU controller. (See DXU control for how this is accomplished).

The BZU Screen Menu

Below is shown the Main Menu once the BZU controller has been selected from the Controllers list.



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Setting Temperatures

To show the temperatures in any of the zones being controlled by the BZU:

1. Press **`All Settings`**.
2. Next, press the Zone that you want to adjust. For example, to adjust Zone 2, press anywhere on that line, as shown here:

3. In the Settings display that appears next, you can see all the settings for that zone.

To change the temperature in a zone:

1. Press the temperature setting display box that appears beside **`Zone Occ SP`** (Setpoint). A keypad display appears, allowing you to enter a new temperture setting.
2. Press the **`CLR`** button on the keypad display. The display box becomes empty.
3. Insert the desired temperature for that zone by keying in the correct temperature setting.
4. Press the **`SAVE`** key.

Repeat these steps for each zone temperature that needs to be adjusted.

When the BZU controller that you are working with has been programmed, you can now program the next controller by pressing **`HOME`**, followed by **`Controllers`**. Then press the next control that you want to adjust from the Controllers list.

Setting the Hydronic Zone for Controllers

To associate a DXU4 to a BZU, you start from the BZU control screen. Press **`Members`** to display a list of the DXU units on the network. The member status of each is shown in the right-hand column. A member unit is one that operates with shared settings from the BZU. To change the member status of a DXU controller, just press that controller. It will toggle member or non-member with each press. If a DXU has been selected or deselected, you must press **`Save`** afterward to comfirm the new setting.

If no Hydronic Zone is selected, the DXU4 uses the zone temperature sensor to which it is connected.

DXU3 / DXU4

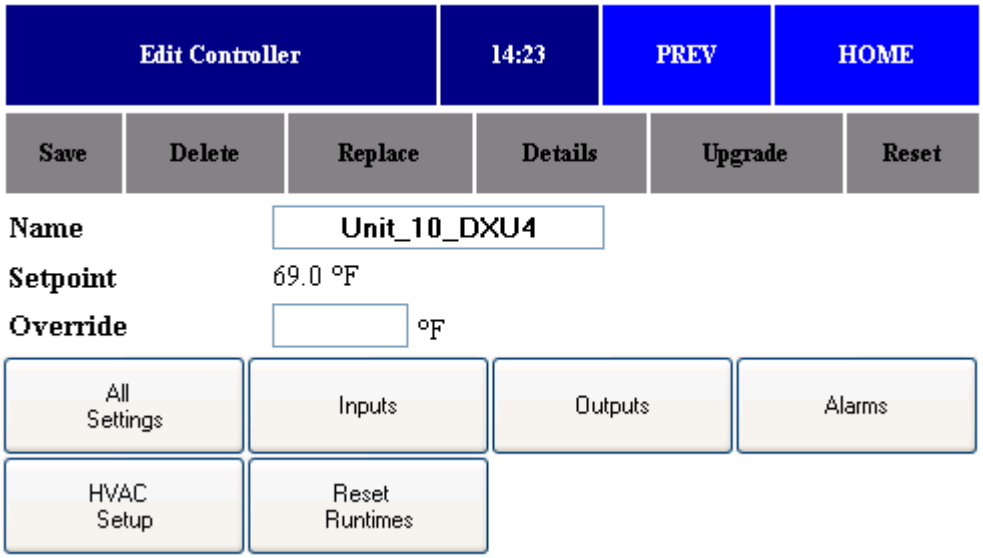
What it does:

The DXUx controller is used to stage heating and cooling to satisfy the space demands. The DXU4 can also be configured to share temperature readings with a BZU controller.

> **NOTE:** When the DXU is associated to a BZU, the heating setpoint can only be set in the DXUx controller; the setting will be sent to the BZU controller automatically!

DXUx screen menu

Below is shown the Main Menu once the DXU4 controller has been selected from the Controllers list.



Setting the Temperature Setpoints

To adjust the temperature for the zone being controlled by the DXU:

1. press **`All Settings`**.
2. Press **`Setpoints`**. You now see a list of the setpoint and related settings (offsets, unocc offsets, and so on).
3. Press the number that you want to change. The keypad appears to allow you to specify a new temperature.
4. Press **`CLR`** button to clear the box.
5. Key in the disired temperature setting.
6. Press **`SAVE`**.
7. Repeat these steps for each temperature you wish to adjust.

ZXU1

What it does:

The ZXU1 is used to control one injection loop for heating, cooling, or both (auto) for different tasks. It can be configured for a reset demand with a configurable outdoor reset curve, a zone setpoint demand or a snowmelt demand. The ZXU1 can be associated to a BLMC controller to generate a heat demand, as described in the technical tips and hints section. controller is used to stage heating and cooling to satisfy the space demands.

Setting a Zone Temperature:

1. press **`All Settings`**.
2. Press **`Reset Settings Heat`** to set up your basic system design temperatures.
3. Press **`Zone Setpoint`** to set your individual Zone Temperatures.
4. Adjust to your comfort Temperature in the same way as described for the BZU2.
5. Press **`Setpoint Mode`** and select **`Zone Setpoint`** from the drop down menu.

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BLMC, BZU2, & ZXU1 TECHNICAL TIPS AND HINTS

The BLMC can be used in a Stand Alone or Networked Mode of operation. If the BLMC will be used with BZUx controllers then an Local Control Interface user interface is required.

What does the BLMC Do?

The BLMC controller can control up to 4 single stage boilers or 4 modulating boilers, and domestic hot water. Up to 24 controllers of type BZU2 and ZXU1 can be associated to a BLMC to provide network demands to the BLMC controller.

Since the BLMC may be configured for many different scenarios it is strongly recommended that the *iWorx® BLMC Application Guide* be reviewed prior to installation and commissioning. The next section points out many things the installer/commissioning technician should be aware of when configuring and setting up a hydronic system.

When to use the BLMC?

The BLMC can be used for boiler staging and cascading for up to 8 boilers. (See the *iWorx® BLMC Application Guide* for details.)

Important Wiring information

- For complete wiring information please refer to the *iWorx® BLMC Application Guide* or *Installation Guide*.
- Make Sure Terminal 40 ‘GND’ is properly connected to earth ground on the BLMC and BZUx controllers.
- Make Sure Terminal 38 ‘COM’ is properly connected to earth ground on the BZUx controller.
- Make Sure Terminal 39 ‘GND’ is properly connected to earth ground on the BZUx controller.
- Ensure that only Echelon approved cable is used on the LON Bus. The cable we recommend is Level 4, 22 AWG stranded twisted pair.
- When connecting temperature inputs (Analog sensors) to the controller, shielded cable is recommended. Recommended wire includes 14-22 AWG shielded twisted pair for all analog inputs with 18 AWG recommended. Shields must be connected to an earth ground near the controller.

Important Config Settings for BLMC and BZUx

- If BZUx is used to handle high temperatures (slate or concrete floors), only set the BLMC Heat demand to “ON” in the All Settings screen of the BZUx. The BZUx will communicate a primary loop demand and cause the boilers to fire.
- If BZUx is used to handle low temperatures (baseboard, exotic wood floors), only set the Boiler Zone demand to “ON” in the All Settings screen of the BZUx. The BZUx will communicate a Setpoint Demand to the boiler.
- For interaction with the BLMR only, if using a BZU with firmware version v1.00 you must set the Kp and Ki for each zone to the suggested values of, Kp=10 & Ki=5. If left at the defaults of 20 you may experience short cycling of the BZUx zones and Boiler Zone Pump when at or near setpoint!
- NEVER Leave ANY Commissioning Switch set to the ‘ON’ position. If it is set to the ON position all of the controller’s outputs will be ON and the boilers or zone pumps will cycle on and off based on its internal temperature limit/protection.
- Snow melt can be done with a ZXU1 connected to a BLMC. The ZXU1 communicates the demand as a primary demand to the BLMC. In the *All Settings* menu, the *Setpoint Mode* settings must be specified as *Snowmelt* or *Snowmelt Differential* and the System design temperature values have to be set up in the *Reset Settings Heat* structure. A Snowmelt sensor of digital dry contact type must be wired into the Heat Demand Input of the ZXU1 (Terminal 9 and 10, UI7 and Com).

Associating a BZU or ZXU to a BLMC

Since multiple BLMC, BZUx, and ZXU1 controllers can be part of an iWorX system, it is necessary to group these controllers so that the BLMC knows which BZUx controllers it may receive a demand from.

1. From the main menu, press **Controllers**.
2. From the Controllers page, press the BLMC controller.
3. From the Edit Controller page, press **Members**.
4. From the BLMC Zone Members page, press each BZUx and/or ZXU1 that needs to be associated with this BLMC controller. Ones included indicate 'Master:.....' and are shown in Red, while those not included indicate 'Not Associated' and are shown in gray.
5. Once all desired controllers are selected to be Included or Excluded, press **SAVE**. After pressing **SAVE**, you will receive a message indicating 'Send Grouping Done'.
6. Press **OK**. The BLMC and associated BZUx controllers will now communicate.

NOTE: The BLMC can also be associated to one more BLMC controller for cascading of up to 8 boilers. The routine for including another BLMC is the same as described in the above sequence.

Frequently Asked Questions

What creates a Heating Demand on a BLMC?

Heating Demands are created on the BLMC when any of the following inputs are activated: Reset Demand or Temperature Demand (RDMD), Auxiliary Demand or Temperature (AUX), or a networked demand from a BZU2 or a ZXU1 type controller. If the Reset demand in the BLMC is configured as a Reset temperature, the input sees the heating demand from a 10K precon Type III room sensor such as the iWorX TRW Sensor. Remember that this is the ONLY zone being controlled by the BLMC controller.

Networked BZUx controllers may also create a demand on the BLMC. To ensure communications are properly configured for networked demands, please see the above topics: "Important Config Settings for BLMC and BZUx" and "Associating a BZU or ZXU to a BLMC".

- How do I Create a Heating Demand on the BLMC when not using an iWorX TRW sensor connected to the Reset Demand input and no networked zones?

To Convert a standard Heating Demand (TT terminals on relays or the closure of any dry contact, on conventional thermostats) to a demand on the BLMC RDMD input terminals:

a. Connect the TT output, as long as it is a dry contact, of a zone relay panel to the RDMD input on the BLMC (Terminals 12-13). For complete wiring details refer to the *iWorx® BLMC Application Guide* or *Installation Guide*.
b. Need LCI3 to input BLMC setpoints.

Why am I getting so many alarms?

Open or shorted sensors give error readings of either -29 F or 239 F. If sensors are not used, the error readings are recorded as alarms. If too many alarms are generated, it will slow down the system response.

How do I eliminate these nuisance alarms?

A 10K resistor can be placed across terminals where the sensors are not being used. Remember that this will give the controller a reading of approximately 77 Degrees F.

Why are my temperature inputs fluctuating by several degrees?

The temperature inputs may fluctuate do to the controller not being correctly grounded or improper wire being used on the inputs.

- Make Sure Terminal 40 'GND' is properly connected to earth ground on the BLMC and BZUx controllers.
- Make Sure Terminal 38 'COM' is properly connected to earth ground on the BZUx controller.

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- When connecting temperature inputs (Analog sensors) to the controller shielded cable is recommended. Recommended wire includes 14-22 AWG stranded twisted shielded pair for all analog inputs with 18 AWG recommended. Shields must be connected to an earth ground near the controller.

What Sensors are Required on the BLMC?

- A SENSOR IS REQUIRED ON THE BOILER SUPPLY INPUT (terminal PST; terminals 17&18) BOILER RETURN INPUT (PRT terminal terminals 19&20). The Boiler Return Sensor is optional, only if the boilers need boiler protection, the sensor must be populated and the "Max Differential Setting" in the "System Settings" Structure must be set to a value other than 0 F.

How Do I Zone with a BLMC?

Zoning can be accomplished as follows:

- With traditional zoning methods using pump relays or zone valves with end switches. Remember this requires a dry contact from the zone panel or end switch wired into the Reset Demand input of the BLMC.
- A BZUx (Boiler Zoning Unit) or ZXU1 (Zone Mixing Unit) networked to a BLMC.

How do I wire zone valves to the BZUx outputs?

The BZUx outputs simply switch the 24 VAC common leg. So all you need to do is bring one side of the 24VAC to one terminal of the zone valve, and return the other leg of the zone valve to an output terminal on the BZUx (for example: terminal 31). The common terminal associated with that terminal of the BZUx goes back to the transformer common. In this fashion, when the BZUx calls for heat, the common is switched and power is provided to power the zone valve open. For wiring to BZUx outputs refer to the ‘iWorX Hydronic application and wiring guide’.

What types of zone valves are recommended?

Since the BZUx outputs are capable of handling up to 1 amp of current draw, we highly recommend a motorized zone valve. We discourage the use of heat operated zone valves since these valves draw nearly 1 amp of current and tend to generate significant heat when activated.

Notes:

LIMITED WARRANTY STATEMENT

Taco Electronic Solutions, Inc. (TES) will repair or replace without charge (at the company's option) any product or part which is proven defective under normal use within one (1) year from the date of start-up or one (1) year and six (6) months from date of shipment (whichever occurs first).

In order to obtain service under this warranty, it is the responsibility of the purchaser to promptly notify the local TES stocking distributor or TES in writing and promptly deliver the subject product or part, delivery prepaid, to the stocking distributor. For assistance on warranty returns, the purchaser may either contact the local TES stocking distributor or TES. If the subject product or part contains no defect as covered in this warranty, the purchaser will be billed for parts and labor charges in effect at time of factory examination and repair.

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