User Guide & Instruction Manual

IntelliStation® Jr.

A Fully Connected Digital Water Mixing Solution

Watts® OnSite

⚠ WARNING

Read this Manual BEFORE using this equipment.

Failure to read and follow all safety and use information can result in death, serious personal injury, property damage, or damage to the equipment. Visit PowersControls.com with any questions.

Keep this Manual for future reference. DO NOT DISCARD.

THINK SAFETY FIRST

POWERS™

A WATTS Brand

POWERS™
A WATTS Brand

LIMITED WARRANTY / LIMITATION OF REMEDY:

What is covered? Powers warrants to the original purchaser only, that the product it manufactured when used as intended and instructed, is free from defects in materials or workmanship for five year warranty from date of shipment to the original purchaser.

What is not covered? This Limited Warranty does not cover or is voided by (a) any product, components or parts not manufactured by Powers, (b) faulty or improper installation or unsuitable installation environment, (c) failure to follow instructions or warnings, (d) problems caused by unauthorized attachments, modification, repairs or parts, (e) negligence or vandalism, (f) problems due to foreign material, adverse or improper water conditions, chemicals, contamination, improper pH, water treatment activities or products, mineral deposits, or decomposition by galvanic action, (g) shipping defects or damage, (h) normal wear and tear, (i) any abuse, misuse, unintended use, failure to maintain or inspect, (j) any circumstances over which Powers has no control.

IN NO EVENT SHALL POWERS BE LIABLE TO BUYER OR THIRD PARTIES FOR ANY GENERAL, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO, PROPERTY DAMAGE, PERSONAL INJURIES, LOST PROFITS, LOSS OF SAVINGS OR REVENUE, LOSS OF THE USE OF THE PRODUCT OR ANY ASSOCIATED PRODUCTS, COST OF REPAIR, COST OF ANY SUBSTITUTE PRODUCTS OR SERVICES, DELAY DAMAGES, LABOR CHARGES, FINES/ PENALTIES, ECONOMIC OR NON-ECONOMIC LOSSES, ARISING DIRECTLY OR INDIRECTLY FROM THE SALE/ PURCHASE, OWNERSHIP, INSTALLATION, OR USE OF THE PRODUCT, WHETHER BASED ON BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT LIABILITY, OR ANY OTHER LEGAL THEORY.

What will Powers do? THE SOLE AND EXCLUSIVE REMEDY UNDER THIS LIMITED WARRANTY OR ANY IMPLIED WARRANTIES, is: Within a reasonable period of time after receiving a timely and bona fide claim, Powers will at its sole option (a) repair the product, or (b) replace the product (or component) with a same or similar product. A replaced product is warranted for 90 days from the date of return shipment, or for the balance of the original Limited Warranty period, whichever is longer. **IN NO EVENT SHALL POWERS LIABILITY EXCEED AN AMOUNT EQUAL TO THE SALES PRICE OF THE PRODUCT.**

To obtain warranty service: Contact Powers at 888-432-8932 with description of the problem and proof of the date of original purchase. Cost of shipping and insuring returned product must be paid by purchaser. Powers is not responsible for any loss of damage to the product incurred during shipping.

Disclaimer of other warranties: THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. ALL IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE DISCLAIMED.

POWERS™

A **WATTS** *Brand*

COMPUTER SYSTEM, NETWORK AND DATA DISCLAIMER:

IntelliStation® Jr. receives stores and displays data concerning your water distribution system, performs functions based upon owner/user data input and selections, and can be remotely programmed and utilized with specified and compatible building automation systems.

AS SUCH, POWERS MAKES NO EXPRESS OF IMPLIED WARRANTY, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, REGARDING COMPATIBILITY WITH OTHER TECHNOLOGIES, HARDWARE, SOFTWARE, NETWORK OR SYSTEMS, THE ACCURACY OR COMPLETENESS OF ANY DATA, THE SECURITY OF ANY COMPUTER NETWORK OR SYSTEM, OR ANY RESULTS TO BE ACHIEVED FROM THE INTELLISTATION JR. OR ANY COMPUTER NETWORK OR SYSTEM. POWERS HAS NO RESPONSIBILITY OR LIABILITY ARISING FROM: THE UNAUTHORIZED USE OF THE INTELLISTATION JR; THE CONNECTION TO OR INTEGRATION WITH A USER'S OR ANY OTHER COMPUTER NETWORK OR SYSTEM; ANY HARDWARE OR SOFTWARE NOT SUPPLIED BY POWERS; ANY DATA THAT IS INCORRECT, CORRUPT OR CORRUPTED, LOST, STOLEN OR PIRATED; ANY FAILURE TO SECURE THE INTELLISTATION JR. OR THE USER'S OR ANY OTHER COMPUTER NETWORK OR SYSTEM; ANY "CRASHING" OR TEMPORARY/ PERMANENT INOPERABILITY OF INTELLISTATION JR. OR ANY COMPUTER NETWORK OR SYSTEM; ANY UNAUTHORIZED USES, USERS, OR INTRUDERS OF THE INTELLISTATION JR. OR ANY COMPUTER NETWORK OR SYSTEM; ANY INTENTIONAL OR UNINTENTIONAL VIRUSES OR CORRUPTION OF ANY KIND OF THE INTELLISTATION JR. OR ANY COMPUTER NETWORK OR SYSTEM; OR ANY THIRD PARTY ACTION SUCH AS HACKING OR UNAUTHORIZED ACCESS OR USE OF THE INTELLISTATION JR. OR ANY COMPUTER NETWORK OR SYSTEM.

Table of Contents

Attention Owners and Users

Thank you for purchasing the **Powers IntelliStation® Jr.**. This equipment will provide safe and productive operation as long as it is installed, set up, used, and serviced in accordance with the instructions in this Manual and is properly maintained. Owners and users of this equipment have the responsibility to make certain that this equipment is used properly and safely. To avoid the possibility of death, serious personal injury, property damage, or damage to the equipment, owners should not permit anyone to touch this equipment unless they are over 18 years of age, are adequately trained and supervised, and have read and understand this Manual. Owners should ensure that no unauthorized personnel come in contact with this equipment.

READ THIS MANUAL carefully, learn how to install, set up, use, service and maintain this equipment correctly, and strictly follow all safety information and instructions contained in this Manual and on the equipment, as well as any requirements of local, state, and federal law. Failure to do so could result in death, serious personal injury, property damage, or damage to the equipment. This Manual should be considered a permanent part of the IntelliStation Jr. and be kept available for easy reference by any user.

If this equipment, or any of its parts, becomes damaged or needs repair, stop using the equipment and contact an experienced service individual immediately. If the product labels or this Manual are misplaced, damaged or illegible, or if you require additional copies, please visit PowersControls.com.

Please remember that this Manual and the product labels do not replace the need to be alert, to properly train and supervise users, and to use common sense when using this equipment.

If you are ever uncertain about a particular task or the proper method of operating this equipment, ask your supervisor, consult this Manual, visit PowersControls.com, or contact your local sales representative.

Product Identification

Please record your product's identification and purchase information which will help in the event you have questions or need any service.

Model:	Date of purchase:
	Seller name / address:

Important Safety Information

Reading & Understanding the Manual

⚠ WARNING

TO AVOID DEATH, SERIOUS PERSONAL INJURY, PROPERTY DAMAGE, OR DAMAGE TO THE EQUIPMENT:

• **Read the Manual and all product labels and follow all safety and other information.**

• **Learn how to properly and safely use the equipment BEFORE installing, set up, using, or servicing.**

• **Keep the Manual available for easy access and future reference.**

• **Replace missing, damaged, or illegible Manual and product labels.**

• **Replacement Manuals available at PowersControls.com**

Understanding Safety Information

This safety-alert symbol is shown alone or used with a signal word (DANGER, WARNING, or CAUTION), a pictorial and/or a safety message to identify hazards and alert you to the potential for death or serious personal injury.

⚠ DANGER
Identifies hazards which, if not avoided, will result in death or serious injury.

⚠ WARNING
Identifies hazards which, if not avoided, could result in death or serious injury.

⚠ CAUTION
Identifies hazards which, if not avoided, could result in minor or moderate injury.

NOTICE
Identifies practices, actions, or failure to act which could result in property damage or damage to the equipment.

This pictorial alerts you to the need to read the manual.

This pictorial alerts you to scalding, burn and hot water hazards.

This pictorial alerts you to burn and hot surfaces hazards.

This pictorial alerts you to electricity, electrocution, and shock hazards.

This pictorial alerts you to the need to perform appropriate Lock Out/ Tag Out procedures.

IntelliStation Jr. Description and Specifications

The IntelliStation Jr. LFIS075VL*, LFIS100VL*, LFIS150VL* and LFIS200VL* are electronic water mixing valves providing user-directed control and monitoring water distribution. They include an electronic Control Module featuring a color touch screen digital display to select desired outlet water temperature, an electronically actuated valve that mixes hot and cold water, a quick response temperature sensor and check valves. These electronic mixing valves monitor mixed outlet temperature. They also feature a user programmable high temperature Sanitization mode to help limit water borne bacteria as part of a user-directed and controlled thermal eradication protocol.

These electronic mixing valves supports building automation system (BAS) communication with BACnet MSTP and Modbus protocol, allowing remote programing and data viewing.

Installation and adjustment of these electronic mixing valves are the responsibility of the owner and installer and must be done by qualified personnel in accordance with the manufacturer's instructions, and complying with all governmental requirements, building and construction codes and standards. It is recommended to install LFIS075VL, LFIS100VL, LFIS150VL and LFIS200VL as part of an ASSE compliant water distribution system, including mixing valves and/or temperature limiting devices at all point-of-use fixtures (faucets, sinks, tubs, showers, etc.) that are approved to ASSE 1016, 1069, 1070 and 1071. The owner and user of the LFIS075VL, LFIS100VL, LFIS150VL and LFIS200VL is responsible for selecting and installing the product in an appropriate water distribution system, proper sizing, maintaining proper water quality/condition, and deciding what temperature is safe and appropriate for the water distribution users and facility.

*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

Installation

NOTICE

Radio Frequency Interference
The installer must ensure that this control and its wiring are isolated and/or shielded from strong sources of electromagnetic noise. Conversely, this Class B digital apparatus complies with Part 15 of the FCC Rules and meets all requirements of the North American Interference-Causing Equipment Regulations. However, if this control does cause harmful interference to radio or television reception, which is determined by turning the control off and on, the user is encouraged to try to correct the interference by re-orientating or relocating the receiving antenna, relocating the receiver with respect to this control, and/or connecting the control to a different circuit from that to which the receiver is connected.

NOTICE

Installation of IntelliStation® Jr. is performed by the owner using qualified and licensed trades such as plumbers and electricians, following all local, state, federal and other governmental requirements, and all building and construction codes and standards. Step-by-step installation instructions depend upon the application and the configuration of the building's water distribution system.

All installations require thorough flushing of all piping BEFORE installation, and testing for and eliminating all leaks before and after installation.

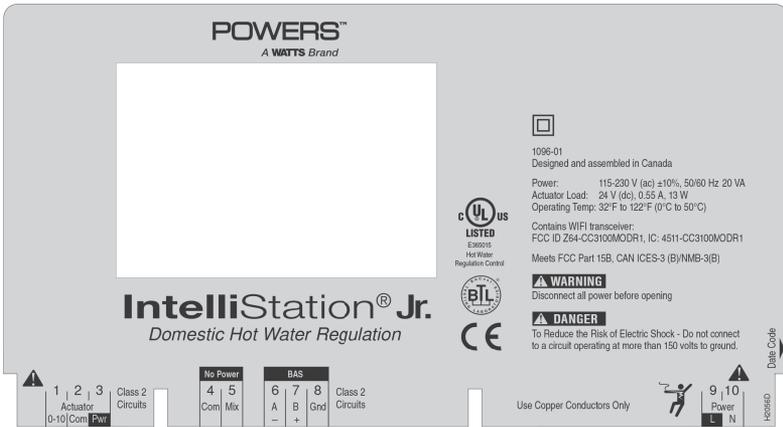## Connect inlets and outlet and check for leaks

To connect Power supply

- Press down on top of the front cover and pull out and down
- Lift the front cover up and away from the controller
- Loosen the screws at the front of the wiring cover
- Pull wiring cover straight out from the wiring chamber
- Connect live wire to terminal marked "L" and neutral wire to terminal marked "N" (see page 8)
- Re-assemble in reverse order.

Mixed Outlet

Front Cover

Cold Water Inlet

Wiring Cover

Hot Water Inlet

Control Unit Connections

POWERS™
A **WATTS** *Brand*

1096-01
Designed and assembled in Canada

Power: 115-230 V (ac) ±10%, 50/60 Hz 20 VA
Actuator Load: 24 V (dc), 0.55 A, 13 W
Operating Temp: 32°F to 122°F (0°C to 50°C)

Contains WIFI transceiver:
FCC ID Z64-CC3100MODR1, IC: 4511-CC3100MODR1

Meets FCC Part 15B, CAN ICES-3 (B)/NMB-3(B)

c(UL)us
LISTED
E365015
Hot Water
Regulation Control

BTL

⚠ **WARNING**
Disconnect all power before opening

⚠ **DANGER**
To Reduce the Risk of Electric Shock - Do not connect
to a circuit operating at more than 150 volts to ground.

C E

IntelliStation® **Jr.**
Domestic Hot Water Regulation

1	2	3	Class 2 Circuits	No Power		BAS				Class 2 Circuits			
				4	5	6	7	8				9	10
0-10	Com	Pwr		Com	Mix	A −	B +	Gnd				L	N

Actuator

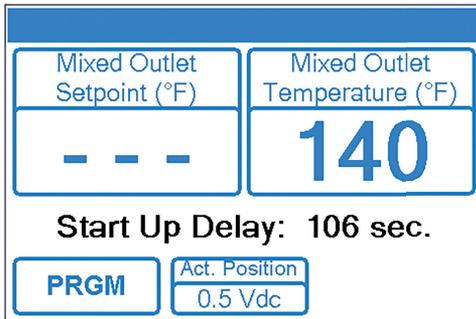Use Copper Conductors Only

Power

Date Code

H3056D

Set up and Programming

Turn on Power

1. Turn IntelliStation Jr. power "ON" by connecting the power supply. When powered up, the display will show a brand display for 4 seconds.
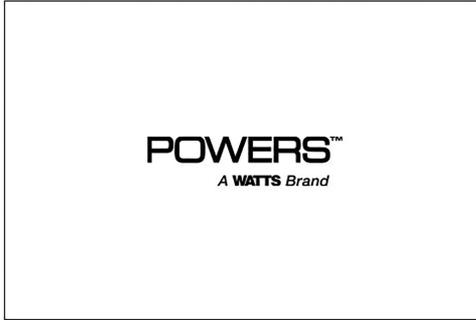
2. The display will then show a 106 second countdown timer, shown as the following:.

NOTICE

The control will begin mixing operations automatically after a period of time, at least 100 seconds or longer. During this time the user may adjust setting and configure the control by touching the PRGM menu.

3. To program the system press **"Programming"** button. The "programming screen will appear.

Set up and Programming

Create a passcode

The IntelliStation comes programmed with a factory default passcode (1017). For added security, and to help prevent unauthorized access, it is recommended that you create a unique 4 digit passcode as outlined below.

1. On the Programming Menu, touch the **UNLOCK** icon. The Unlock function screen will appear and you will be prompted to enter the passcode:
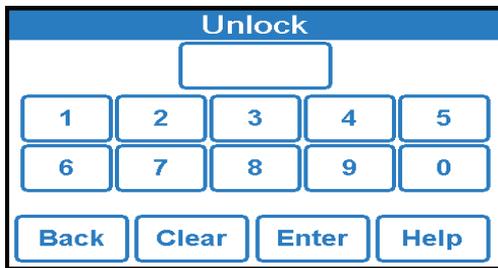

2. Creating your own passcode:
- To create your own passcode, enter the factory default passcode 1017 and press the **Help** icon in the lower right corner of the Unlock screen.
- Enter a new 4-digit passcode and touch the Enter icon (make sure to keep your new code in a secure place).
- Re-enter the new passcode and touch the Enter icon again to finalize the passcode change.

NOTICE

If you make a mistake when re-entering your new passcode and it does not match your first entry, the screen will continue to display the following screen and wait for the new code to be re-entered.
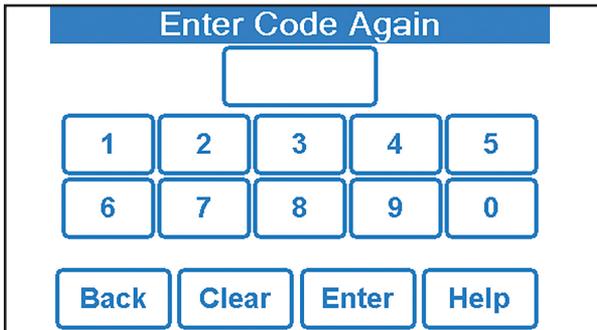
To restart the process of assigning a new code press the Back icon and start with step 1 in the Create a passcode section.

Set up and Programming

Unlock the system

1. To unlock the system, on the Unlock screen, enter your new passcode, and touch the **Enter** icon.

NOTICE

If you need to clear your entry and start again, touch the **CLEAR** icon. If you want to go back to Programming Menu, touch the **BACK** icon.

If you did not set up your own passcode, you can enter the factory default passcode 1017.
2. When the passcode is entered, you will be directed to the liability and responsibility acceptance screen:
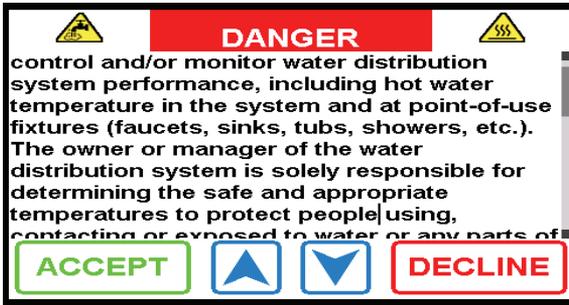
3. You must touch the **ACCEPT** icon to proceed to the Programming Menu and to use system functions.

Touching the **DECLINE** icon means you will not be able to change system settings and you accept all default settings (including the outlet water temperature set point of 140° F/ 60° C) as safe and appropriate for the water distribution system users and the facility. You will be returned to the "Programming" screen.

4. When you touch the **ACCEPT** icon, you will access the Programming Menu, which will appear as:

Set up and Programming

System Setup Menu

⚠ DANGER

The next steps involve selecting or adjusting the mixed outlet water temperature – the hot water temperature in the water distribution system and delivered to point-of-use fixtures (faucets, sinks, tubs, showers, etc.). The owner or manager of the water distribution system is solely responsible for determining the safe and appropriate temperatures to protect people using, contacting or exposed to water or any parts of the water distribution system from scalding, burning, thermal shock or other hazards, and to control waterborne bacteria in the system. Only qualified and authorized personnel who fully understand each function's operation, output and risks, should use Programming Menu functions. Always read and follow the User Guide & Instruction Manual.

Touch the **SETUP** icon which will direct you to the Setup Menu which will appear as:
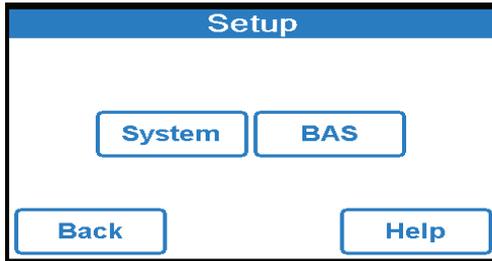
You can either setup the operation of the system by pressing the **System** button or configure the BAS connection by pressing **BAS** button. To setup operation of the system continue with the system setup. To turn on WiFi and register device for mobile or web app connectivity, see page 15. To turn on and configure the BAS connection, see page (24).

System Setup

Valve Selection	3/4" & 1"
Mixed Outlet Setpoint	140 °F
High Temp. Alert Differential	15 °F
Low Temp. Alert Differential	15 °F

Back ▲ ▼ **Help**

Valve Selection

☐ 3/4" & 1"

☐ 1-1/2" & 2"

Accept **Help**

Aug 28, 2019 3:23 PM

| Mixed Outlet Setpoint (°F) | Mixed Outlet Temperature (°F) |
| 104 | 120 |

Valve Selection Is Not Set

PRGM Act. Position 0.0 Vdc ❗

Note: If valve selection is not made this error message will appear. Must select a size to continue.

Set up and Programming

Selecting and Setting Outlet Water Temperature Set-point:

> ## ⚠ WARNING
>
> **BEFORE setting mixed outlet water temperature or electing default temperature, point-of-use mixing valves and/or temperature limiting devices MUST be installed at all fixtures (faucets, sinks, tubs, showers, etc.)**

Set the safe, appropriate and desired outlet water temperature for your users, application and facility by pressing **mixed outlet setpoint** from system setup menu and using the **SLIDER** or **UP** and **DOWN** arrows until the selected temperature is displayed. Press **ACCEPT**

> ⚠ The owner or manager of the water distribution system is solely responsible for determining the safe and appropriate temperatures to protect people using, contacting or exposed to water or any parts of the water distribution system from scalding, burning, thermal shock or other hazards, and to control water-borne bacteria in the system.
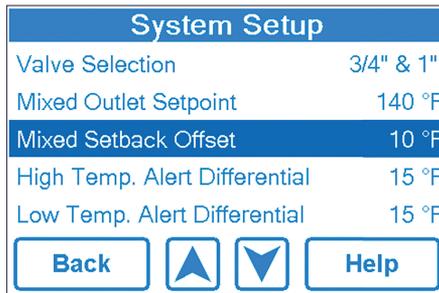
Once the desired temperature is selected, press the **ACCEPT** icon to apply the setting. You will be returned to the System Setup Menu screen.
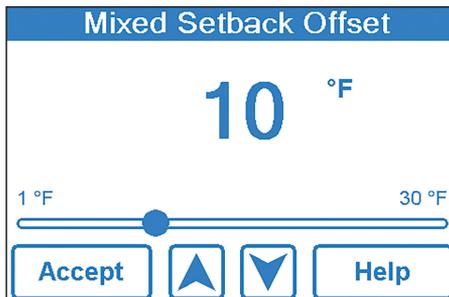
Set up and Programming

Note: Mixed Setback Offset is only available if 1. a date and **Time** are selected, and 2. a **Schedule** is selected, both found in the **Programming** menu. For **Time Function** settings see pages 39-41.
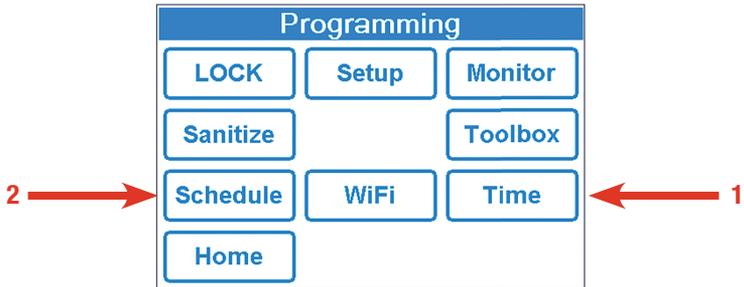
To set mixed setback offset (to set temperature lower during unoccupied period) press word **Mixed Setback Offset** from the **System Setup menu.**


Use the SLIDER or UP and DOWN arrows until the desired temperature is displayed. Press ACCEPT icon to apply the setting. You will be returned to the System Setup Menu screen.

Set up and Programming

To change high temperature alert differential, press word **High Temp. Alert Differential** from the **System Setup** menu. High temperature alert differential can be changed by **SLIDER** icon or by **UP** or **DOWN** arrows and then pressing **ACCEPT.**

High Temp. Alert Differential

15 °F

10 °F   30 °F

Accept   ▲ ▼   Help
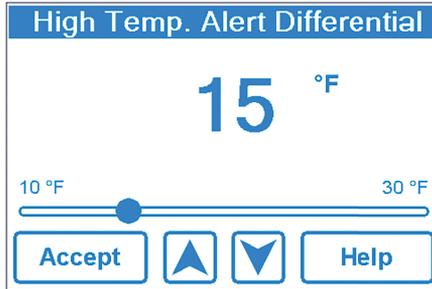
To change low temperature alert differential, press word **Low Temp. Alert Differential** from the **System Setup** menu. **Low temperature alert differential** can be changed by **SLIDER** icon or by **UP** or **DOWN** arrows and then pressing **ACCEPT.**

Low Temp. Alert Differential

15 °F

10 °F   30 °F

Accept   ▲ ▼   Help
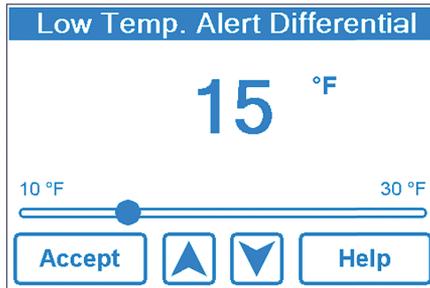
⚠️ **If you are finished at this time, the system will return to a locked state if not touched for 100 seconds.**

Or, touch the **BACK** icon twice to return to the "Programming" menu, then press **LOCK**
When the system is locked, the "Programming" menu will now display the **UNLOCK** icon, as shown below:

Programming

UNLOCK	Setup	Monitor
Sanitize		Toolbox
Schedule	WiFi	Time
Home		

Register IntelliStation Jr. (Device)
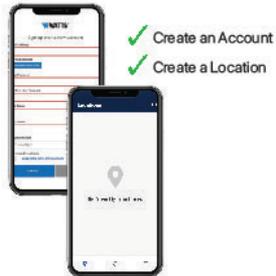
IntelliStation Jr IoT_Quick Start Guide

A quick guide to set up the Watts OnSite App, connect to WiFi, and register the IntelliStation Jr. device.

Note: for detailed instructions and how to navigate in the app see pages 16-23.
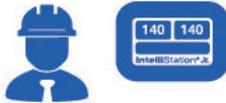
1 To start, access the app:

Search for 'Watts OnSite' in the App Store or on Google Play

Download on the **App Store**

GET IT ON **Google Play**

www.wattsonsite.com

2 Set up app:

✓ Create an Account
✓ Create a Location

3 Connect IntelliStation Jr. to WiFi:

140 140
IntelliStation Jr.

✓ Turn WiFi On
✓ Connect to Network SSID
✓ Verify Postal/Zip

4 Register IntelliStation Jr. to app:

140 140
IntelliStation Jr.

Select 'Register Device' under WiFi menu to generate 8-digit Registration Code

✓ Enter 8-digit code to Add Device

Register IntelliStation Jr. (Device)

Register IntelliStation Jr. for Mobile and Web App Connectivity (or visit PowersControls.com for the How To Video)

1. Download Watts OnSite app available on the iPhone App Store and Google Play (1.1a) and create an account (1.2a). Note: This can also be accessed through the web app, visit wattsonsite.com

2. Set up IntelliStation Jr. locations prior to selecting Register Device on unit
   a. How to set up locations (2.1a, 2.2a)
   b. How to set up sublocations (2.3a, 2.4a)
   c. How to add a device (3.1a, 3.2a). On the app, select the + sign to add your first device. You will receive a prompt to enter a registration code. To Register the device, see screens in section 3.
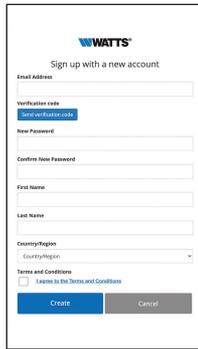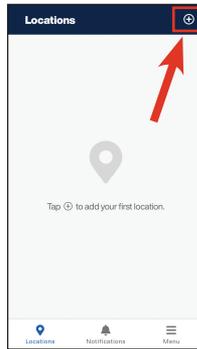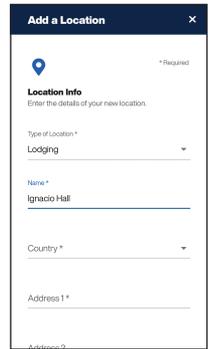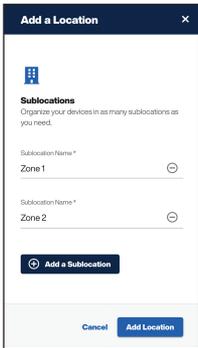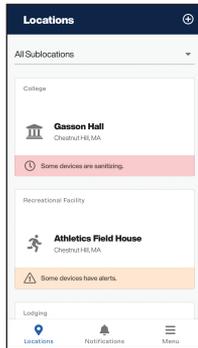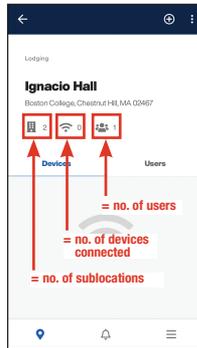
(1.1a)   (1.2a)   (2.1a)   (2.2a)

(2.3a)   (2.4a)   (3.1a)   (3.2a)

Register IntelliStation Jr. (Device)

3. Starting at the controller, register device and connect to network.
A Registration Code from the device is required to set up the app.

1. Select PRGM

Dec 30, 2020 11:12 AM

Mixed Outlet Setpoint (°F)	Mixed Outlet Temperature (°F)
140	**140**

Maintaining Setpoint

PRGM | Act. Position 0.5 Vdc

2. Select UNLOCK

Programming

UNLOCK	Setup	Monitor
Sanitize		Toolbox
Schedule	WiFi	Time
Home		

3. Enter the passcode (default or assigned)

Unlock

1017

1	2	3	4	5
6	7	8	9	0

Back | Clear | Enter | Help

4. Select WiFi

Programming

LOCK	Setup	Monitor
Sanitize		Toolbox
Schedule	WiFi	Time
Home		

5. If WiFi is not On... Select WiFi for menu

WiFi

WiFi ← Off

Back | ▲ | ▼ | Help

6. Select the appropriate WiFi security protocol and Accept

WiFi

○ **Off**
○ **WPA2-PSK**
◉ **WPA2-PEAP-MSCHAP**

Accept | Help

7. Select User ID (for WPA2-PEAP-MSCHAP)

WiFi

WiFi — MSCHAP
User ID ←
Network SSID — Test SSID
Postal/Zip: Chelmsford, MA — 01824
Register Device

Back | ▲ | ▼ | Help

8. Enter User ID and Accept

User ID

–

Q	W	E	R	T	Y	U	I	O	P
	A	S	D	F	G	H	J	K	L

⬆ | Z | X | C | V | B | N | M | ⌫

?123 | / | SPACE | , | .

Accept | Help

Register IntelliStation Jr. (Device)

9. Select Network SSID

WiFi	
WiFi	MSCHAP
User ID	
Network SSID ←	Test SSID
Postal/Zip: Chelmsford, MA	01824
Register Device	
Back ▲ ▼ Help	

10. Choose the WiFi network to connect

Network SSID	
Test SSID	CONNECT
Select new	SSID
Back ▲ ▼ Help	

11. If the network is secured, enter the password

Enter Password

Q W E R T Y U I O P
A S D F G H J K L
↑ Z X C V B N M ⌫
?123 / SPACE , .

Back   Connect   Help

12. WiFi Network verifying...

WiFi Network

Verifying network connection.

📶

OK

13. WiFi Network verified, select OK

WiFi Network

Network setup successful.

📶

OK

14. Once Network is established, select Postal/Zip and enter your Postal/Zip code for accurate location and date/time stamp and select Accept

Postal/Zip

_

Q W E R T Y U I O P
A S D F G H J K L
↑ Z X C V B N M ⌫
?123 / SPACE , .

Accept   Help

15. Select Register Device

WiFi	
WiFi	MSCHAP
User ID	
Network SSID	Test SSID
Postal/Zip: Chelmsford, MA	01824
Register Device ←	
Back ▲ ▼ Help	

16. Register Device

Registration

To finish register your Intellistation Jr., enter the code displayed below in to the app.

▦ Watts® ⌂nSite
13446212

The registration code will expire in 29:52 minutes.

Back

Register IntelliStation Jr. (Device)

4. Add a Device Continued (3.2a, 3.3a, 3.4a)


(3.2a)

(3.3a)

(3.4a)

5. Device details

    a. **Dashboard** (4.1a)

       i. Performance History Graph

- Select arrow down icon ⬇ to download reports, CSV file is emailed. A PDF file can be generated from the OnSite web app.
- Select settings icon ⚙ for different views, options 24 hours, 7 days, 30 days
- Select information icon ⓘ for Performance Graph Legend

      ii. Mixed Outlet Setpoint Adjustment: How to change settings (4.2a) Scroll below the History graph and select the ellipsis icon to change the Mixed Outlet Setpoint (4.3a). Use Slider or Arrows to adjust temperature Up/Down and select Save once desired set point is achieved. Remote Max Exceeded message (4.4a) indicates the Mixed Outlet Setpoint is limited when set remotely. Anything outside of this threshold is controlled at the device.

(4.1a)

(4.2a)

(4.3a)
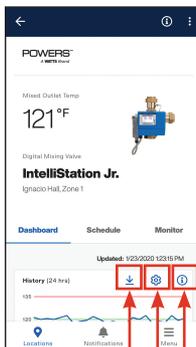
(4.4a)

Download reports

Select view/time frame
Legend

19
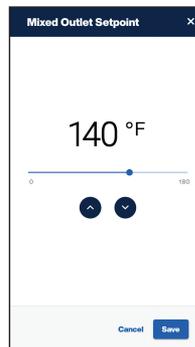
iii. High Temperature Alert Differential*: how to change setting (4.5a)

iv. Low Temperature Alert Differential*: how to change setting (4.6a)

*Note: Temperature Alert Differentials are triggered if the temperature delta set is exceeded.

b. **Schedule:** set temperature to turn down and save energy during "off" hours (4.7a, 4.7aa) Schedule Setback allows facility to lower Mixed Outlet Temperature during no/low demand periods to save energy and improve efficiency.

i. Setback Offset Edit setting, scroll down to bottom of Schedule tab (4.8a), select ellipsis icon ⋮ . A prompt to Edit Setting or Help will appear. Select Edit Setting to adjust temperature (4.9a). Prompt to confirm changes (4.9aa)

c. **Monitor** (4.10a) displays highest and lowest Mixed Outlet Temperatures recorded since last reset. To reset values, select refresh arrow ↻ (4.10a). This will clear Highest and/or Lowest Mixed Outlet Temperature history (4.11a)
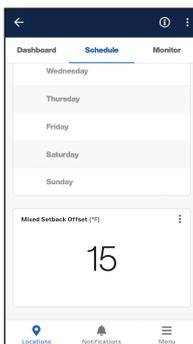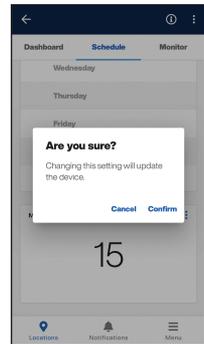

(4.5a)
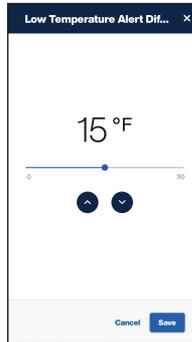
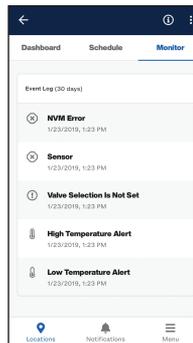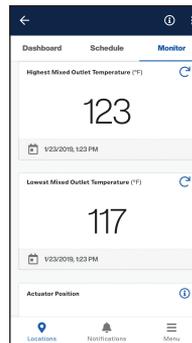(4.6a)
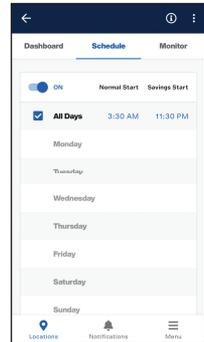
(4.7a)
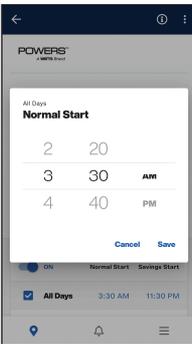
(4.7aa)

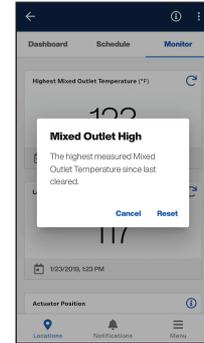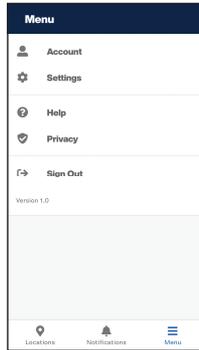(4.8a)

(4.9a)

(4.9aa)

(4.10a)

(4.10aa)

(4.11a)

Register IntelliStation Jr. (Device)

6. From the Dashboard (4.1a), select the Menu button for Menu details (6.1a)

(4.1a)   (6.1a)

7. There are four ways to see Notifications, choose how you would like to receive. Notifications can be filtered by Priority (OnSite automatically prioritizes based on criticality) or by Date issued.
1. View "In app" (7.1a)
2. Push (8.1a) Note: Phone number must be entered and saved in order to receive push notifications.
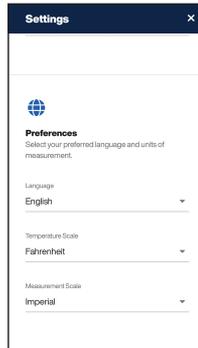3. Email (8.1a)
4. Text (8.1a)

8. Set up Preferences: From Dashboard (4.1a) select, Menu, From Menu (6.1a) select Settings (8.1a) and scroll below Notifications. (8.1aa)
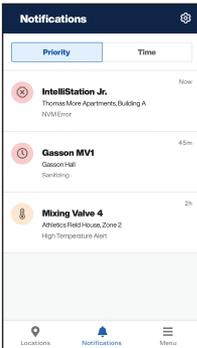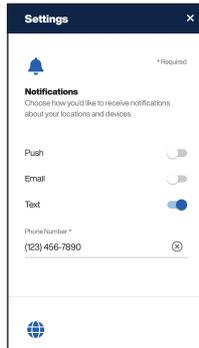
(7.1a)   (8.1a)   (8.1aa)

Register IntelliStation Jr. (Device)

9. Users

    a. User Permissions: there are 3 levels of Users

        i. Owner: acts as the Super User with full read and write capabilities and invites others into the app.

        ii. Admin: has remote control and monitoring capabilities. They can also send additional invites.

        iii. User: has remote monitoring capabilities only. They cannot send additional invites.

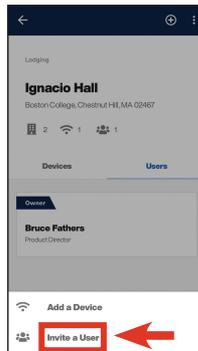| Permissions	Owner	Admin	User
Setup Account	X		
Add/Remove Location	X	X	
Add/Remove Device	X	X	
Add/Remove Admin	X	X	
Add/Remove User	X	X	
Change Setpoint	X	X	
Change High Alert Offset	X	X	
Change Low Alert Offset	X	X	
Change Location	X	X	
View Devices	X	X	X
View Alerts	X	X	X
View Reports	X	X	X
View Location	X	X	X

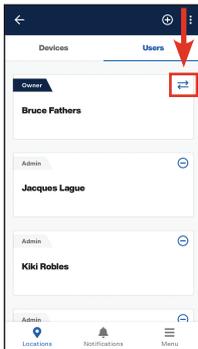   b. Managing Users (3.5a, 3.6a, 3.7a, 3.8a) & Transferring Ownership (5.4aa, 5.4a)
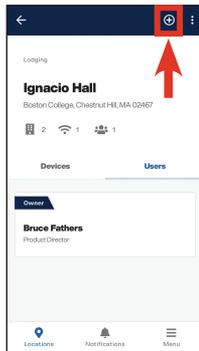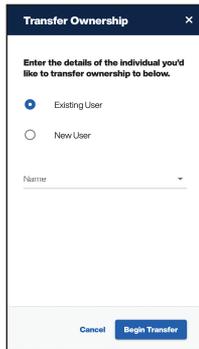

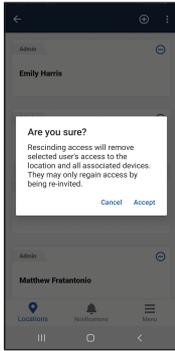(3.5a)　　　(3.6a)　　　(3.7a)　　　(3.8a)

(5.4aa)　　　(5.4a)

An Owner can reassign Ownership in the event of a position change, or for any reason.

Register IntelliStation Jr. (Device)

10. How to Delete a user (5.3a). Select ⊖ icon from the user name you wish to remove access. A confirmation dialog box will appear. Edit, Leave, or Delete a location (5.2a, 5.2aa, 5.1a).

(5.3a)
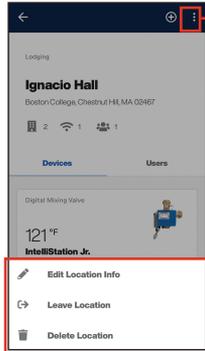
(5.2a) Note: only Admins and Users can Leave a Location, prompt does not appear for Owner access

(5.2aa)

(5.1a)

11. In the event the Owner would like to Deregister the Device, this is done at the IntelliStation Jr Controller

Configuring the Control for BAS communication

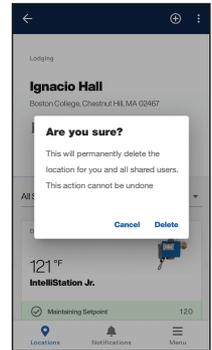**1.** Configure the control to communicate using the "User Interface-BAS Menu" information within this manual and/or the "BAS Integration Manual."

Introduction

The IntelliStation Jr. can communicate with a Building Automation System (BAS) using BACnet® MS/TP and Modbus RTU. This manual provides information about the measurements, control parameters, and error messages which can be assessed by building automation and/or management systems that use BACnet® MS/TP or Modbus RTU communication. The IntelliStation Jr. can be configured to provide remote monitoring and remote temperature set point control.

BAS Connection Procedure

⚠️ **DANGER**

BEFORE attempting to connect BAS, a certified and qualified electrician MUST fully de-energize and disconnect all electrical power from IntelliStation®Jr..

Perform required LOCK OUT/TAG OUT procedures.

BAS connection MUST be performed by certified and qualified electrician.

1. After completely de-energizing and disconnecting all power from IntelliStation® Jr. and performing required LOCK OUT/TAG OUT, carefully open the IntelliStation control module to reveal BAS hook up terminals.

⚠️ **As an additional safety check, once the box is open, confirm that the unit is de-energized by measuring the AC voltage across the "L" and "N" terminals (9 and 10 respectively) using the voltmeter. Alternatively, use a voltage detector to confirm that the unit is NOT energized.**

2. With the control module open, the BAS connections are visible on bottom side as shown below.

Optional BAS Connection
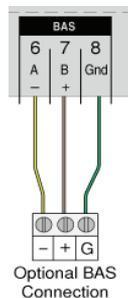
3. The control module has a knock-out plug hole. Knock-out the plug hole and run the BAS wire to the controller.

A grommet or wire protector should be used to protect the wire from being damaged by the enclosure hole opening.

4. If connecting the controller to a BACnet MSTP system run the A(-), B(+), GND terminals from the nearest BAS system component and connect to terminals 6, 7, and 8 (-, +, Gnd) of the IntelliStation control Module 1069.

⚠ DANGER

IntelliStation® and BAS connections must be properly grounded.

DO NOT ground to the enclosure. Ground ("Gnd") terminal must be connected to terminal "A" marked "Gnd".

5. If connecting the controller to a Modbus BAS system system run the A(-), B(+), GND terminals from the nearest BAS system component and connect to terminals 6, 7, and 8 (-, +, Gnd) of the IntelliStation control Module 1096.

DO NOT ground to the enclosure. Ground ("Gnd") terminal must be connected to terminal "A" marked "Gnd".

BAS® Settings in the Intellistation Control Module Menu

When the unit powers up it displays a Powers logo screen for 4 seconds and then a Start Up Delay screen counting down from 106 seconds. After 106 seconds the control will automatically redirect to the "Home" screen. From the home screen touch the PRGM icon to access the "Programming" menu.
Note: The settings menu can be accessed prior to the time elapsing by touching the PRGM icon.

Mixed Outlet Setpoint (°F)	Mixed Outlet Temperature (°F)
120	119

PRGM
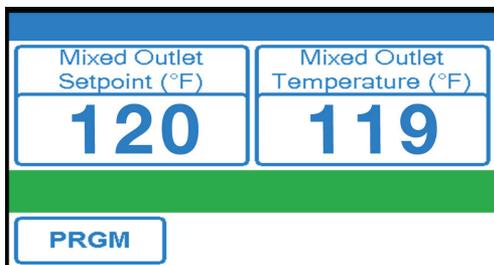
From within the "Programming" menu (shown below) only the **Home**, **Setup** and **UNLOCK** icons are active until the control is in the unlocked state. Note: After 60 seconds of inactivity the control automatically locks and returns to the home screen.

To unlock the control select the **UNLOCK** icon from within the "Programming" menu

Unlock the control by entering your password and selecting the **ENTER** icon. If you have not yet set your password, please refer to page (8) for password setup. If the wrong code was entered select **Clear** to try again. Note: the **ENTER** icon will only work if the correct code is entered. Once unlocked, the control automatically redirects to the "Programming" menu but this time the **UNLOCK** icon will appear as **LOCK** icon, indicating that the control is unlocked, and the other icons (SETUP, MONITOR, SANITIZE, TOOLBOX, SCHEDULE, Wi-Fi, AND TIME) will now be active.

Select the **setup** icon from within the "Programming" menu to access the "Setup" menu shown below.

Select the **BAS** icon from within the "Setup" menu to access the "Building Automation" menu shown below.

Setup

System   BAS

Back   Help
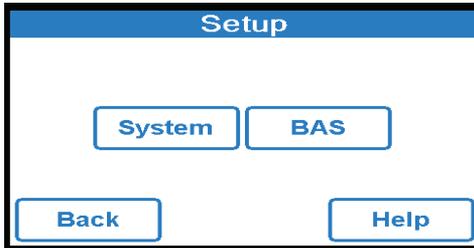
The default "BAS Type" is "NONE" as shown below.

Building Automation

BAS Type   NONE

Back   ▲   ▼   Help

To change this setting press the "BAS Type" and adjustment screen will appear (as shown below).

BAS Type

NONE
BAC-MSTP
MODBUS

Accept   ▲   ▼   Help
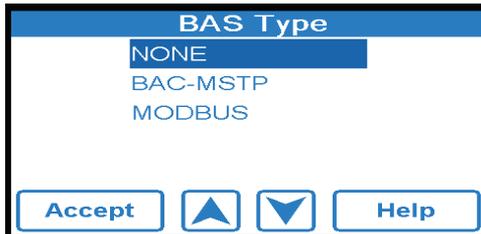
Depress the **UP** and **DOWN** arrows to scroll through the BAS types and depress the icon to configure the control to the highlighted type and return to the "Building Automation" menu. Note: depending on the BAS Type selected, various user configurable items will now appear within the "Building Automation" menu. A table of the user definable items is shown below.

The Building Automation "BAS Menu" shows default settings for each of the communication protocols supported by this control (BACnet® MSTP and Modbus).

BACnet Specific Settings

To change the BACnet Device ID, press the words **BACnet Device ID**, enter the device ID number, and press **ACCEPT**.

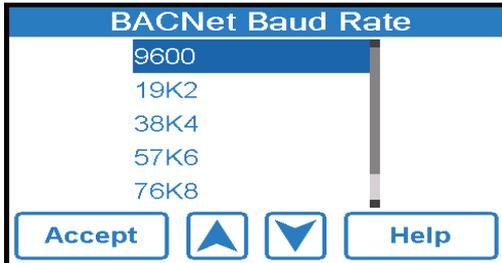To change the BAC-MSTP Address, press the words **BAC-MSTP Address**, enter the address, and press **ACCEPT**.

To change the BACNet baud rate, press the words **Bacnet Baud Rate**, select the baud rate using the **UP** and **DOWN** arrows, and press **ACCEPT**

BACnet® Protocol Implementation Statement (PICS)

Vendor Name: Powers
Vendor ID: 834
Product Name: IntelliStation
Product Model Number: 109601
Application Software Version: J1277x

Product Description:
The IntelliStation is a mixing control designed to deliver tempered water to plumbing fixtures. The control uses a Proportional Integral (PI) logic to accurately maintain a target temperature by mixing a high temperature water source with a low temperature water source. This control also offers advanced features including communication with a Building Automation System (BAS).

> ⚠ **IntelliStation provides user-directed control and monitoring of water distribution systems. It is the user's responsibility to select and maintain water temperatures and pressures that are safe and appropriate for the water system users, guests and facility. IntelliStation's Sanitization mode is intended for use as part of a user-directed, controlled and supervised protocol that has been safely and properly designed. It is recommended to install IntelliStation® as part of a ASSE 1070 compliant water distribution system, including point-of-use mixing valves. Always read and follow User Guide & Instruction Manual and all product warnings and labels, and comply with all governmental and safety requirements.**

BAS Menu

BACnet Standardized Device Profile (ANNEX L)
BACnet Application Specific Controller (B-ASC)

Supported BIBBs (Annex K)	Name
DS-RP-B	Data Sharing-ReadProperty-B
DS-RPM-B	Data Sharing-ReadPropertyMultiple-B
DS-WP-B	Data Sharing-WriteProperty-B
DM-DDB-B	Device Management-Dynamic Device Binding-B
DM-DOB-B	Device Management-Dynamic Object Binding-B
DM-DCC-B	Device Management-Device Communication Control-B

Note: Device communication control password is "Powers1017".

Segmentation Capability	Supported
Able to transmit segmented messages	No
Able to receive segmented messages	No

Standard Object Types Supported	Creatable	Deletable
Analog Input	No	No
Analog Value	No	No
Binary Output	No	No

Data Link Layer	Supported
BACnet® IP (Annex J)	No
BACnet® MSTP	Yes

Device Address Binding	Supported
Static Device Address Binding	No

Network Security Options
Non-Secure Device

Character Set	Supported
ANSI X3.4	Yes

BACnet® Analog Parameters

| Objective_ Identifier	Objective_ Type	Objective_Name	Present Value	Status_ Flags	Description	Range/ Value	Event_State	Reliability	Out_ Of_ Service	Units
0	analog-Input	Mixed Outlet Temperature		FFF(F/T)	Mixed Outlet Temperature	0 to 266F	EVENT_STATE_ NORMAL	0, 1, 4, 5	FALSE	UNITS_ DEGREES_ FAHRENHEIT (64)
1	analog-Input	Valve Position		FFF(F/T)	Analog signal provided to actuator	0.0 to 10.0 V	EVENT_STATE_ NORMAL	0	FALSE	UNITS_ VOLTS (5)
2	analog-Input	Mixed Outlet High		FFF(F/T)	Highest recorded mixed outlet temperature	0 to 266F	EVENT_STATE_ NORMAL	0	FALSE	UNITS_ DEGREES_ FAHRENHEIT (64)
3	analog-Input	Mixed Outlet Low		FFF(F/T)	Lowest recorded mixed outlet temperature	0 to 266F	EVENT_STATE_ NORMAL	0	FALSE	UNITS_ DEGREES_ FAHRENHEIT (64)
4	analog-Input	High Temperature Alert Differential		FFF(F/T)	High Temperature Alert Differential	10 to 30 F	EVENT_STATE_ NORMAL	0	FALSE	UNITS_NO_ UNITS (95)
5	analog-Input	Low Temperature Alert Differential		FFF(F/T)	Low Temperature Alert Differential	10 to 30 F	EVENT_STATE_ NORMAL	0	FALSE	UNITS_NO_ UNITS (95)
6	analog-Input	High Temperature Alert Count		FFF(F/T)	High Temperature Alert Count	0 to 65535	EVENT_STATE_ NORMAL	0	FALSE	UNITS_NO_ UNITS (95)
7	analog-Input	Low Temperature Alert Count		FFF(F/T)	Low Temperature Alert Count	0 to 65535	EVENT_STATE_ NORMAL	0	FALSE	UNITS_NO_ UNITS (95)
8	analog-Input	Error Code		FFF(F/T)	Numerical error code (see error code table)	1 to 4	EVENT_STATE_ NORMAL	0	FALSE	UNITS_NO_ UNITS (95)
Others	analog-Input	ERROR	ERROR	ERROR	Communication error	ERROR	ERROR	ERROR		

Analog Valve Objects

Objective_ Identifier	Objective_ Type	Objective_Name	Present Value	Status_ Flags	Description	Range/ Value	Event_State	Out_Of_ Service	Units
0	analog-value	Mixed Outlet Setpoint		FFF(F/T)	Target Temperature	60 to 180F	EVENT_STATE_ NORMAL	true to false	UNITS_DEGREES_ FAHRENHEIT (64)
Other	analog-value	ERROR	ERROR	ERROR	Communication error	ERROR	ERROR	ERROR	

Modbus Specific Settings

To enter the Modbus address, press the words **Modbus Address** from **Building Automation** menu and enter Modbus address and **ACCEPT**.
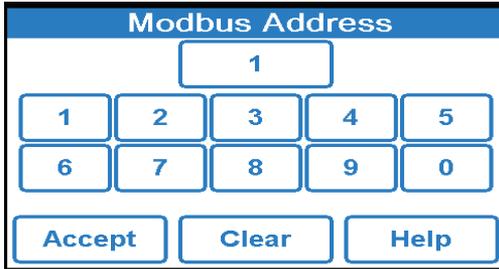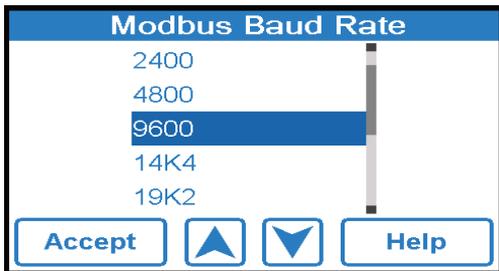

To select, press the words **Modbus Data Type** from Building Automation menu and enter desired data type and **ACCEPT.**
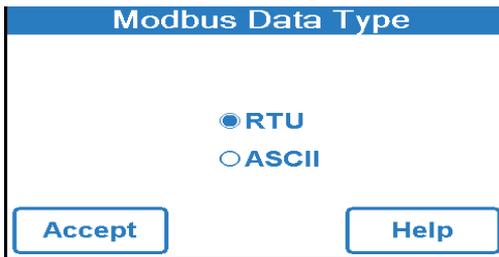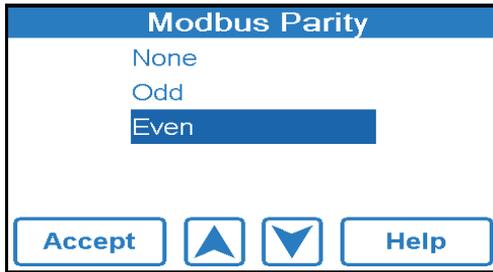

To select Modbus baud rate, press the words **Modbus Baud Rate** from **Building Automation** menu. Select desired Modbus Baud Rate by **UP** or **DOWN** arrows and **ACCEPT.**

To enter the modbus parity, press the words **Modbus Parity** from Building Automation menu and select desired modbus parity by **UP** or **DOWN** and **ACCEPT.**

Modbus® Specifications

Communication Protocol	Modbus over RS485
Physical Layer	RS485 Two-Wire plus Signal Ground
Baud Rate	1200, 2400, 4800, 9600, 14K4, 19K2, 28K8, 38K4, 57K6, 76K8, 115K2) (default 9600 bps)
Recommended Cable	18 AWG Shielded Twisted-Pair (STP)
Transmission Mode	RTU or ACSII (default RTU)
Maximum Cable Length	Without terminating resistors
	- 115,000 baud --> 177 m (580 ft)
	- 57,600 baud --> 353 m (1,158 ft)
	- 19,200 baud --> 1,000 m (3,280 ft)
	- 9,600 baud --> 1,000 m (3,280 ft)
	- 2,400 baud --> 1,000 m (3,280 ft)
	With 2 x 120 Ohm resistors
	- 115,000 baud --> 1,000 m (3,280 ft)
	- 57,600 baud --> 1,000 m (3,280 ft)
	- 19,200 baud --> 1,000 m (3,280 ft)
	- 9,600 baud --> 1,000 m (3,280 ft)
	- 2,400 baud --> 1,000 m (3,280 ft)
Start Bit	1 Bit
Data Length	8 Bits for RTU Mode
	7 Bits for ACSII Mode
Parity	None (2 Stop Bits)
	Even (1 Stop Bit)
	Odd (1 Stop Bit)
	(default Even)
Addressing	1 to 247 (default 1)

Modbus® Parameters

Read= R   Read/Write= R/W

Analog Input Objects

Parameter	Red/Write	Units	Range	Type	Register	Date Address	Format
Holding Registers							
Mixed Outlet Setpoint	R/W	ºF	60 to 180°F	Holding	40001	0	signed 16 bit, integer
Input Registers							
Mixed Outlet Temperature	R	ºF	0 to 266°F	Input	30001	0	
Valve Position	R	Vdc X 10	0 to 100	Input	30002	1	
Mixed Outlet High	R	ºF	0 to 266°F	Input	30003	2	
Mixed Outlet Low	R	ºF	0 to 266°F	Input	30004	3	
High Temperature Alert Differential	R	ºF	10 to 30°F	Input	30005	4	
Low Temperature Alert Differential	R	ºF	10 to 30°F	Input	30006	5	signed 16 bit, integer
High Temperature Alert Count	R	Counts	0 to 65535	Input	30007	6	
Low Temperature Alert Count	R	Counts	0 to 65535	Input	30008	7	
Error Code	R	Enum	Numerical Error Code (See Error Code List)	Input	30009	8	
Model	R	Num	1096	Input	30010	9	
Firmware Revision	R	Num	SVN Revision	Input	30011	10	

Modbus® Troubleshooting

If there is no communication, check the following:

- Check that the polarity on the Modbus® + and - terminals is correct
- Check that the Modbus® GDN terminal is securely connected.
- Check that the Baud Rate on both devices is the same.

If the communication is intermittent, check the following:

- Check that the communication cable is twisted pair type.
- Reliable communication depends on the cable length & Baud Rate used. Long cable length may require a lower baud rate.

Error Codes

Error Code Priority	Error Code	Error Type	Detail	Cause	How to Clear	Control Behavior during Error Condition
1	1	NVM Error	System	System Menu block corrupted	Load defaults or go thru the System Menu settings	Cease operation
2	2	SENSOR	OPEN or SHORT	Faulty sensor or wiring	Ensure that the sensor wiring is correct Check sensor	Cease operation
3	3	Valve Selection Is Not Set		The Valve Selection is not set to ¾" & 1" or -1½" & 2".	Go to Valve Selection screen in System Setup menu.	Continue operation. Default operation is based on ¾" & 1" coefficients.
4	4	High Temperature Alert		Temperature above Mixed Outlet Setpoint plus High Temp Alert Differential	Increase "High Temp Alert" within the "System" settings. Turn on a tap to cool down the system.	Continue operation
5	5	Low Temperature Alert		Temperature below Mixed Outlet setpoint less Low Temp Alert Differential	Decrease "Low Temp Alert" within the "System" settings. Check heat source	Continue operation

Sanitization

The Sanitization function produces high water temperatures and is intended ONLY for use as part of a user-directed, controlled and supervised thermal eradication protocol that has been safely and properly designed to help limit water-borne bacteria within the tempered water distribution system. The instructions contained in this Manual for the Sanitization function are not intended to be a thermal eradication protocol.

Selecting, directing, and controlling a safe and properly designed thermal eradication protocol is the sole responsibility of the people who own, manage or control the water distribution system. It is their responsibility to protect water distribution end-users, facility employees or contractors, and bystanders from scalding, burning, thermal shock, or other hazards from possible exposure to water or any parts of the water distribution system during Sanitization and cool

⚠ DANGER

The Sanitization function produces high temperature water at all point-of-use fixtures (faucets, sinks, tubs, showers, etc.). Only qualified and authorized personnel who fully understand the function's operation, output and risks, should use the Sanitization function, and only as part of and in compliance with, a thermal eradication protocol safely and properly designed by the owner or manager of the water distribution system. The owner or manager of the water distribution system has sole responsibility to protect end-users, facility employees or contractors, personnel performing the Sanitization, and bystanders from scalding, burning, thermal shock, or other hazards from possible exposure to water or any parts of the water distribution system during Sanitization and cool down period, until system water returns to a safe and proper outlet water temperature set point. Always read and follow the User Guide & Instruction Manual.

1. On the Programming Menu Touch the **Sanitize** icon, which will direct you to the responsibility and liability acceptance page:

2. You must touch the **ACCEPT** icon to proceed with the Sanitization function. Touching the **DECLINE** icon means you will be unable to utilize the Sanitization function and you will be returned to the "Programming" Menu page. When you touch the **ACCEPT** icon, you will be directed to the Sanitization menu screen.
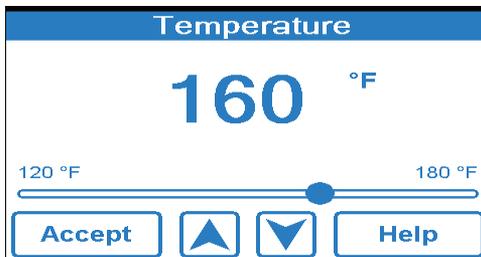
3. Select the sanitization set point by pressing the word **Temperature** from **Sanitization** menu.

4. Using the slide bar or up and down arrows select the desired outlet water temperature. Touch the **ACCEPT** icon to confirm the adjustment.

36

Sanitization

5. Next, Select the run time by touching word **Time** from the **Sanitization** menu.

```
Sanitization
Temperature                    160 °F
Time                           60 min
Mode                              Off

   Back      ▲    ▼     Help
```

6. Using the slide bar or up and down arrows select the desired run time. Touch the **ACCEPT** icon to confirm the adjustment.

```
Time

      60    min

0 min                        600 min
  ─────●──────────────────────
   Accept     ▲    ▼     Help
```

⚠ WARNING

BEFORE starting the Sanitization function, make sure you are in full compliance with a safely and properly designed thermal eradication protocol, protecting end-users, facility employees or contractors, personnel performing the Sanitization, and bystanders from scalding, burning, thermal shock, or other hazards.

7. To start the sanitization function, select the word **Mode** from the **Sanitization** menu.

```
Sanitization
Temperature                    160 °F
Time                           60 min
Mode                              Off

   Back      ▲    ▼     Help
```

Sanitization

8. Once in the Mode menu, toggle to the **ON** radio button and then select **ACCEPT**.
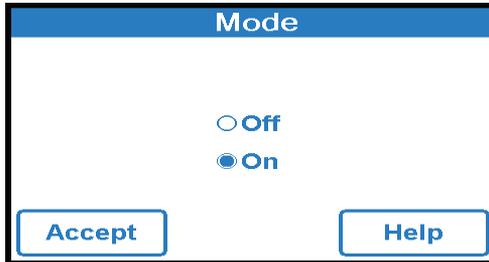
The Sanitization Mode is now fully functional. Note: The HOME screen will indicate you are Sanitizing the water delivery system and indicate Mixed Outlet Temperature.
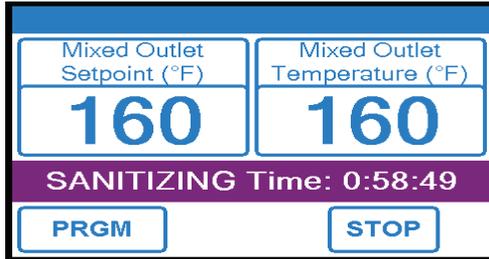
9. After Sanitization Mode has completed (user selected run time has elapsed), the IntelliStation will go into a Cool Down Mode to return to the Mixed Outlet temperature prior to returning to normal operation.
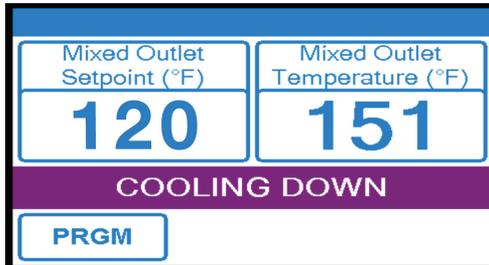
Time Function

Touching the **TIME** icon on the "Programming" Menu will allow access to the Time Function:

To turn on the **Date & Time** functionality, press the word **Date & Time** from the Time Options menu.

Once in the **Date and Time** menu, toggle to the **ON** radio button and then select **ACCEPT**.

To set date and time, press the word **Set Date and Time** from **Time Options** menu.

Time Function

To set date and time, select month, date, year, hour, minute and AM/PM icon at a time and change with **UP** or **DOWN** arrows then select **ACCEPT.**
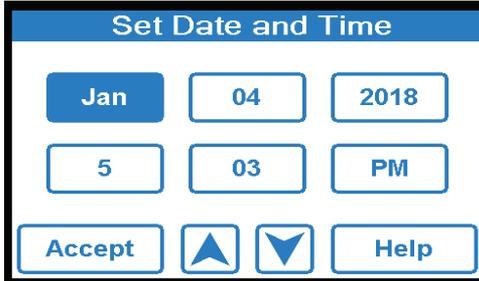
Set Date and Time

| Jan | 04 | 2018 |
| 5 | 03 | PM |

Accept ▲ ▼ Help

To select **time format**, press the word **Time Format** from the **Time Option** menu
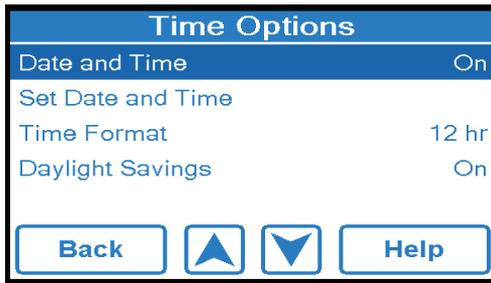
Time Options

Date and Time	On
Set Date and Time	
Time Format	12 hr
Daylight Savings	On

Back ▲ ▼ Help

To select time format, toggle to the **12hr** or **24hr** radio button and select **ACCEPT**
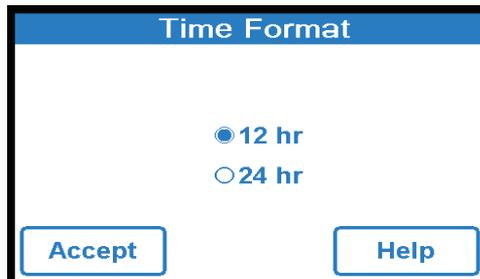
Time Format

◉ 12 hr
○ 24 hr

Accept   Help

Time Function

To select daylight savings time, press the word **Daylight Savings** from the **Time Options** menu.

Time Options

Date and Time	On
Set Date and Time	
Time Format	12 hr
Daylight Savings	On

Back | ▲ | ▼ | Help
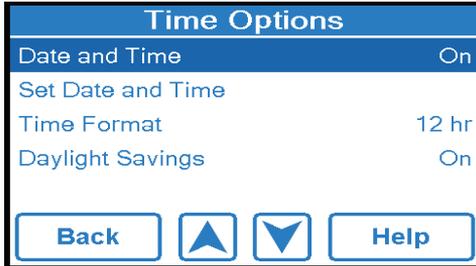
Once in the **Daylight Savings** menu, toggle to **On** radio button and select **ACCEPT**.

Daylight Savings

○ Off
◉ On

Accept | Help

Schedule Function

Touching the **SCHEDULE** icon on the "Programming" Menu will allow access to the schedule Function:

To turn on **schedule**, press the word **Schedule** from the **Schedule** menu

Once in the schedule menu, toggle to the **On** radio button and then select **Accept**.
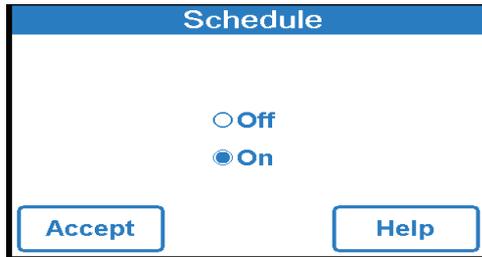
To select the type, press the word **Type** from the **Schedule** menu.
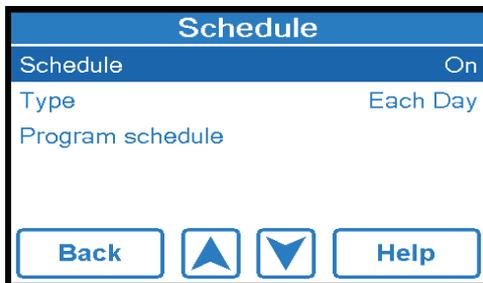
Schedule Function

Once in the **Type** menu, toggle to the **Each Day** radio button and then select **ACCEPT**.

Type

○ All Days
◉ Each Day

Accept   Help

To program **Each Day**, press the word **Program Schedule** from the **Schedule** menu.

Schedule

Schedule	On
Type	Each Day
Program schedule	

Back ▲ ▼ Help

Schedule **Normal and Savings** time and then select **ACCEPT.**

Schedule

| Mon | Tue | Wed | Thr | Fri | Sat | Sun |

Normal   06 00 AM   Skip

Savings   10 00 PM   Skip

Accept ▲ ▼ Help

If prefer all days, toggle to the All Days radio button and then select **ACCEPT.**

To program **All Days** press the word **Program Schedule** from the **Schedule** menu.

Schedule **Normal & Savings** time and then select **ACCEPT**
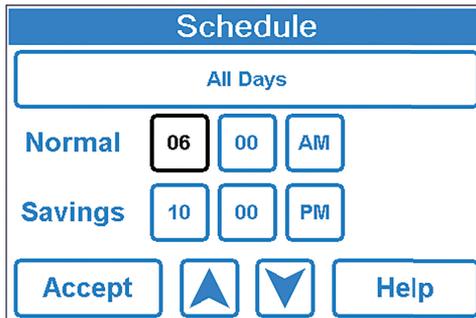
Monitor Function

Touching the **MONITOR** icon on the "Programming" Menu will allow access to the Monitor Function

For mixed outlet high, press the words **Mixed Outlet High** from the Monitor menu then you can **ACCEPT** or **RESET** to zero

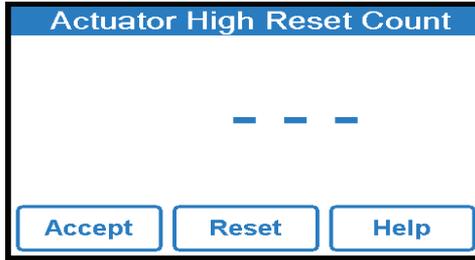For mixed outlet low, press the words **Mixed Outlet Low** from the **Monitor** menu then you can **ACCEPT** or **RESET** to zero

45

Monitor Function

To monitor actuator high reset count, press the words **Actuator High Reset** Count from the **Monitor** menu then you can **ACCEPT** or **RESET** to zero

Actuator High Reset Count

- - -

Accept   Reset   Help

To monitor **actuator low reset** count, press the words **Actuator Low Reset Count** from the **Monitor** menu then you can **ACCEPT** or **RESET** to zero

Actuator Low Reset Count

- - -

Accept   Reset   Help
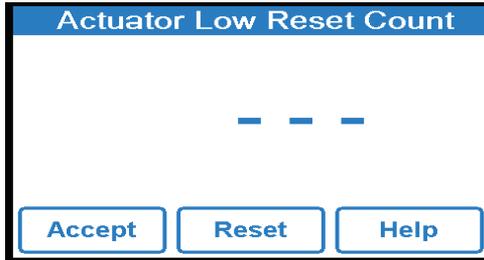
To select reset all. Scroll down through the **Monitor** menu press the words **Reset All**

Monitor

Mixed Outlet High	0 °F
Mixed Outlet Low	- - - °F
Actuator High Reset Count	0
Actuator Low Reset Count	0
Reset All	No

Back   ▲   ▼   Help
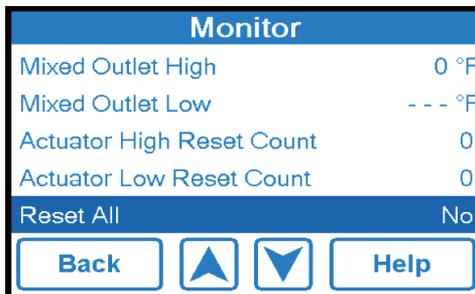
Toolbox Function

Touching the **TOOLBOX** icon on the "Programming" Menu will allow access to the Toolbox Function. Scroll through the Toolbox menu using the **UP** and **DOWN** buttons to access each option.

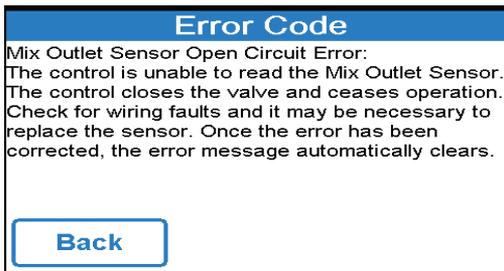| Toolbox	
Error Code	2
Firmware	J1267 H
History Log	3
Load Defaults	No
Temperature Units	°F

| Back | ▲ | ▼ | Help |
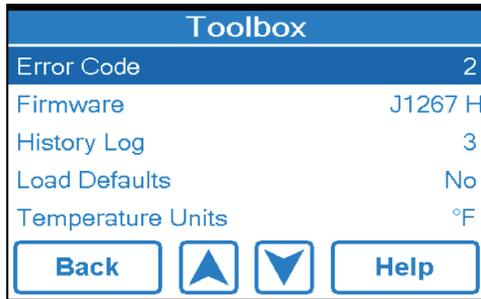
To find out error code press the words **Error Code** from the **Toolbox** menu. after select **Back**

Error Code

Mix Outlet Sensor Open Circuit Error:
The control is unable to read the Mix Outlet Sensor.
The control closes the valve and ceases operation.
Check for wiring faults and it may be necessary to
replace the sensor. Once the error has been
corrected, the error message automatically clears.

Back

To view the control type information for your controls press the word **Firmware** from the **Toolbox** menu and then select **Back**

### Type 109601

View the Control Type information for your control.

Software Version:
J1277E
SVN 590

Back

Toolbox Function

To access the history log, press words **History Log** fro the **Toolbox** menu then select **Back**

History Log
Mix Outlet Sensor Open Error
Jul 06, 2017 7:16 AM

Back ▲ ▼ Help

To select load default, press the words **Load Defaults** from the **Toolbox** menu. Toggle radio button to **No** for no load or **Yes** for Load Defaults and select **ACCEPT**
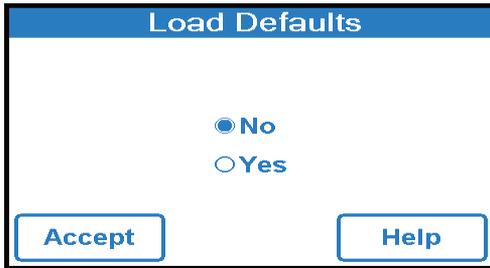
Load Defaults

◉ No
○ Yes

Accept   Help

To select load temperature units, press the words **Temperature Units** from the **Toolbox** menu. Toggle radio button to **F** for Fahrenheit or **C** for Celsius and select **ACCEPT**
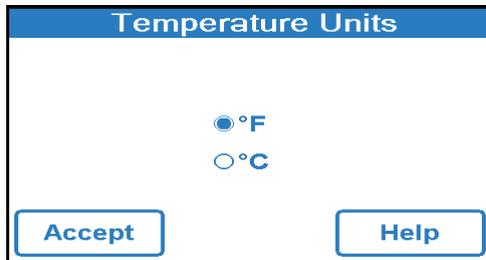
Temperature Units

◉ °F
○ °C

Accept   Help

Toolbox Function

To adjust the screen brightness, press the words **Screen Brightness** from the **Toolbox** menu. Move the slider or use **Up** or **Down** arrows to adjust the brightness and select **ACCEPT**
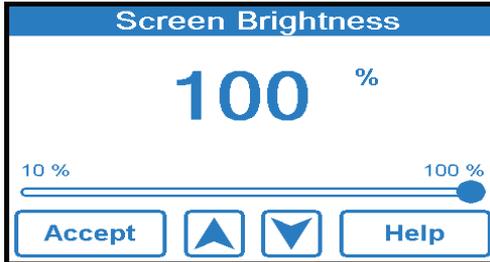
To clean dirty screen, press the words **Clean Screen** on the **Toolbox** menu.
Toggle radio button to **Yes** to lock the screen to clean or **No** to keep it unlock and then select **ACCEPT**.
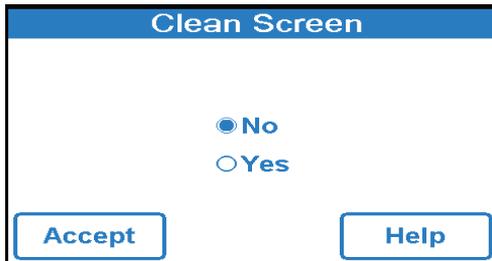
Toolbox Function

To calibrate the touchscreen, press the words **Calibrate Touchscreen** on the **Toolbox** menu
Press each circle to calibrate the touch screen.

Press each circle to calibrate the screen.

Cancel
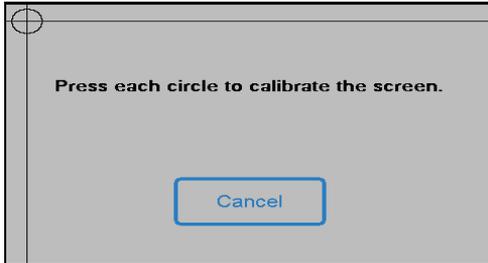
To reset all, press the word **Reset** on the **Toolbox** menu. Toggle the radio button to **Yes** or toggle to **No** to
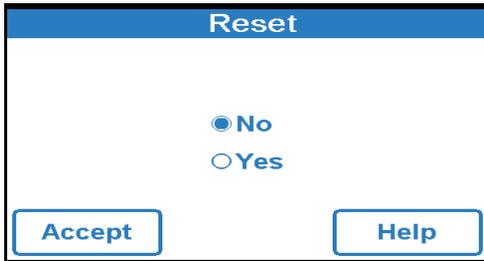leave the current settings

Reset

◉ No
○ Yes

Accept   Help

Troubleshooting

Problem: Outlet temperature is below set point temperature and/or the low temperature alarm has been activated

Solution:

1. Depending on the heating plant plumbing and location, it may take several minutes for the hot water to reach the unit. Ensure that you have allowed enough time (5 minutes) for the system to come up to temperature.

2. On the Home screen, check the "Mixed Outlet Set point" and the hot water supply temperature. The hot water supply temperature needs to be above the set-point or the unit will not be able to reach the set-point.

3. If the hot water supply temperature is BELOW the "Mixed Outlet Set point"
   a. Raise the hot water supply temperature at least 2F (1C) above the mixed outlet set-point temperature.
   b. Ensure that the hot water is flowing.
   c. Check the hot water source set-point temperature and ensure that the hot supply line has no obstructions or closed valves restricting flow to the IntelliStation.

4. If the hot water supply temperature is ABOVE the "Mixed Outlet Set point", there are no obstructions preventing hot water from reaching the unit, and there is sufficient flow through the unit, reset the control by pressing the PRGM icon to access the "Programming" menu. Unlock the control and then select the "Toolbox" to navigate to the "Toolbox" menu. From within the "Toolbox" menu use down arrow to high-light "Reset" then press enter. This will access "Reset" menu. Press the "YES" and then press accept. The controller will reset and begin a start up sequence.

Note: Alternately, the control can be reset by opening and closing the circuit breaker switch and waiting 100 seconds to resume normal operation.

 Always use proper precautions when accessing circuit breaker box.

5. If problem persists after conducting the above outlined problem solving procedures, contact Powers, Technical Support at 888-432-8932 or info@PowersControls.com.

Troubleshooting

Problem: Outlet temperature above set point

Solution:

1. Ensure flow is above the minimum rated flow by opening the hot water valve on two to four fixtures being supplied with tempered water from the panel.

2. Ensure that the cold supply is flowing.

3. Check cold water temperature and ensure that it is lower than the set point temperature and supply line has no obstructions or closed valves restricting flow to the IntelliStation.

4. Unlock the control and then select the "Toolbox" to navigate to the "Toolbox" menu. From within the "Toolbox" menu use down arrow to highlight "Reset" then press enter. This will access "Reset" menu. Press the "YES" and then press accept. The controller will reset and begin start up sequence.

Note: Alternately, the control can be reset by opening and closing the circuit breaker switch and waiting 100 seconds to resume normal operation.

> ⚠ **Always use proper precautions when accessing circuit breaker box.**

5. If problem persists after conducting the above outlined problem solving procedures, contact Powers, Technical Support at 888-432-8932 or info@PowersControls.com.

Problem: If screen displays "---" instead of a measured value

Solution:

1. Sensor is not connected or functioning properly.

2. Check the connection at the sensor and the connection within the control module.

⚠ DANGER

BEFORE attempting to open Control Module, a certified and qualified electrician MUST fully de-energize and disconnect all electrical power from IntelliStation®.

Perform required LOCK OUT/TAG OUT procedures.

When done, reconnection and reenergizing of IntelliStation® MUST be performed by certified and qualified electrician.

Troubleshooting

3. Disconnect all power and fully de-energize IntelliStation™ BEFORE opening the control module. Open the Control Module and locate the sensor.

4. Unlock the control and Power up the system and then select the "Toolbox" to navigate to the "Toolbox" menu. From within the "Toolbox" menu use down arrow to highlight "Reset" then press enter. This will access "Reset" menu. Press the "YES" and then press accept. The controller will reset and begin start up sequence.

Note: Alternately, the control can be reset the control by opening and closing the circuit breaker switch and waiting 100 seconds to resume normal operation.

> ⚠️ **Always use proper precautions when accessing circuit breaker box.**

5. Waiting 1-5 minutes for the control to resume normal operation Also, ensure that there is a load (at least one tap on the mixed outlet system) present while the control is resuming normal operation.

6. If problem persists after conducting the above outlined problem solving procedures, contact Powers, Technical Support at 888-432-8932 or info@PowersControls.com.

Error Codes

If the control detects a problem, an error will display on the Home screen and from within the "Toolbox" menu. To navigate to the "Toolbox" menu unlock the control and select "Toolbox". Resolution is in the chart below.

Code	Description	Resolution	Control Behavior during Error Condition
1	NVM Error	Verify settings in the System Menu or load defaults.	Valve closes and operation ceases.
2	Sensor Error (open or short)	Check the sensor and sensor wiring. Sensor may need to be replaced.	Valve closes and operation ceases.
3	Valve Selection is not set	Select the appropriate valve size using the Valve Selection setting.	Operation continues.
4	High Temperature Alert	Check the valve position. Consider increasing the High Temp Alert Differential setting.	Operation continues.
5	Low Temperature Alert	Check the valve position. Consider increasing the Low Temp Alert Differential setting.	Operation continues.

Replacement Part Numbers

Replacement Part#	Description
6551290	Actuator Kit
6551291	High speed temperature sensor with wire kit
6551624	Controller kit
6551690	3/4" Valve and Actuator Kit
6551691	1" Valve and Actuator Kit
6551692	1 1/2" Valve and Actuator Kit
6551693	2" Valve and Actuator Kit

Scheduled Testing, Inspection and Maintenance

Testing/Inspection

<table>
<tr><td>

⚠ WARNING

Need for Periodic Inspection/Maintenance: This product must be tested periodically in compliance with local codes, but at least once per year or more as service conditions warrant. All products must be retested once maintenance has been performed. Corrosive water conditions and/or unauthorized adjustments or repair could render the product ineffective for the service intended. Regular checking and cleaning of the product's internal and external components helps assure maximum life and proper product function.

</td></tr>
</table>

Maintenance

■ Actuator and/or Valve Removal

NOTICE

Valves and actuators are not field serviceable. They must be removed and replaced.

Tools Required:

- 10mm and 3/8" sockets, elbow and torque wrench. Not required if replacing both valve and actuator
- T30 Torx driver. Not required if replacing both valve and actuator
- 2.5mm Allen key. Not required if replacing both valve and actuator
- 1/8" (3.2mm, #2) slot screwdriver. Not required for valve only replacement
- Wire Stripper and snips. Not required for valve only replacement
- AC Voltmeter. Not required for valve only replacement
- Five to ten 4" zap straps (cable ties)
- 4" & 6" monkey wrenches (gas grips)
- 3" adjustable wrenches (shifting spanner)
- Teflon Tape. Not required for actuator only replacement

■ Actuator Removal Instructions

<table>
<tr><td>

⚠ DANGER

BEFORE attempting to open Control Module, a certified and qualified electrician MUST fully de-energize and disconnect all electrical power from IntelliStation®.

Perform required LOCK OUT/TAG OUT procedures.

When done, reconnection and reenergizing of IntelliStation® MUST be performed by certified and qualified electrician.

</td></tr>
</table>

Scheduled Testing, Inspection and Maintenance

1. Disconnect all power and fully de-energize the IntelliStation system.
2. Once de-energized and disconnected, the display will become inactive and the control box can be opened.
3. Pop open the controller cover and then loosen two screw to expose actuator connection.

> ⚠ **As an additional safety check, once the box is open, confirm that the unit is de-energized by measuring the AC voltage across the "L" and "N" terminals (46 and 45 respectively) using the voltmeter. Alternatively, use a voltage detector to confirm that the unit is NOT energized.**
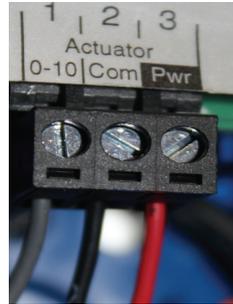
Skip step 3 and 4 if only removing actuator for valve replacement.

4. Using the slot screwdriver loosen terminals 1 to 3 in the upper left side of the control module. Take note of the wire colors connected to each of the terminals.

This connection should be as follows:

1) Grey 2) Black 3) Red

5. Remove the Actuator Cables from the control box.
6. Remove the actuator from the valve as follows:
   a. Using the T30 Torx driver remove the two actuator support plate T30 Torx screws
   b. Using the 10mm wrench loosen the actuator armature clamping nut
   c. Using the T30 Torx driver completely remove the support plate T30 Torx screws
   d. At this point the actuator should be free to slide off the valve stem away from the valve. If not, further loosen the actuator armature clamping nut
   e. Carefully remove the actuator and set it aside.

Actuator
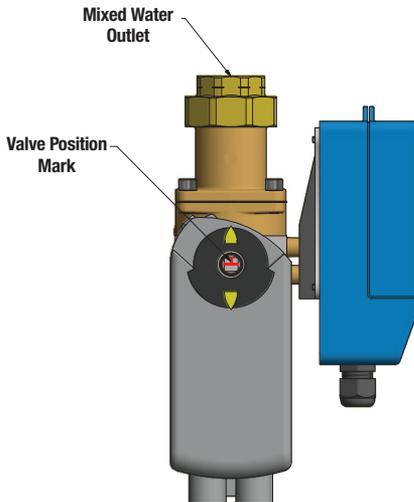

Armature Clamping Nut

Support Plate
T30 Torx screws

Valve Replacement

1. Follow actuator replacement above.
2. Remove bracket and controller from the valve
3. Un-plug sensor from the valve.
4. Remove valve and replace. Install bracket, controller and plug sensor
5. Install actuator. Using the T30 Torx driver, install the support plate T30 Torx screws (see below) until snug. Ensure that the support plate bolts are sufficiently loose to allow for some very slight movement between the support plate and the actuator. This play will allow the actuator to find the proper position when the armature clamping nut is tightened down.

Armature Clamping
Nut

Support Plate
T30 Torx Screws
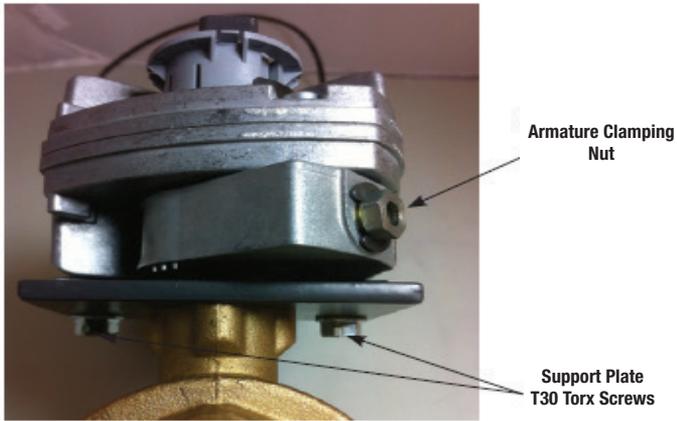
6. The actuator armature must be positioned in the un-powered rest position. Make sure "T" marking on the valve stem is pointing towards mixed outlet. See picture below.


Mixed Water
Outlet

Valve Position
Mark

7. Tighten down the armature clamping nut using the 10mm socket and torque wrench to 50 in-lbs (5.65 N-m)

8. Using the 3/8" socket, elbow and torque wrench, torque down the support plate nut to 50 in-lbs.

Take caution not to over tighten and strip these nuts.

9. Run the control wires up to the control along the same path as when removed.

10. Wire to terminal blocks as follows:
   1. Grey
   2. Black
   3. Red
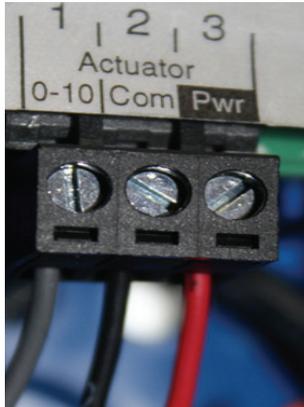
Pink and orange actuator wires are not used by this control

8. Utilize cable ties to secure the wires and close the control module. Once the box is closed, re-energize the unit.

9. Resume normal operation and observe that the actuator and valve are now working properly.
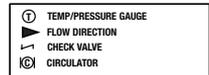
Piping / Recirculation Diagram

IntelliStation JR- LFIS075VL , LFIS100VL, LFIS150VL, & LFIS200VL
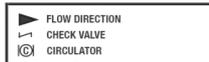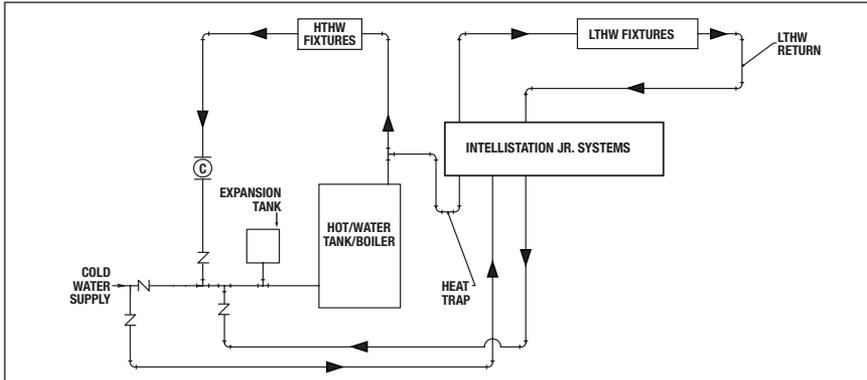
Continuous Recirculation
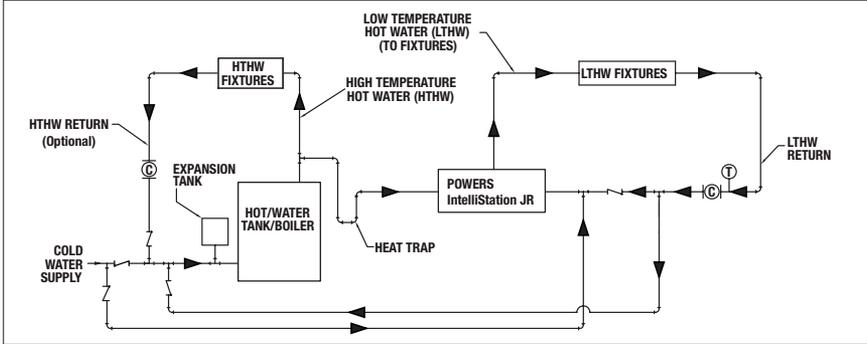
© Select flow rate as necessary to ensure Powers IntelliStation JR is operating
     at an ASSE 1017 minimum certified flowrate. See Literature.

T	TEMP/PRESSURE GAUGE
▶	FLOW DIRECTION
⊢	CHECK VALVE
©|	CIRCULATOR

IntelliStation JR- Systems
LFIS075VL-SYS075RTN, LFIS100VL-SYS100RTN,
LFIS150VL-SYS150RTN, LFIS200VL-SYS200RTN

Continuous Recirculation

▶	FLOW DIRECTION
⊢	CHECK VALVE
©|	CIRCULATOR

POWERS™

A WATTS Brand