TEMPERATURE CONTROLLER

USER'S MANUAL FOR ATK-024-3 and ATK-024-4

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General Information

The Temperature Controller

Operation

Ramp and Soak Profile

Saving the Parameters

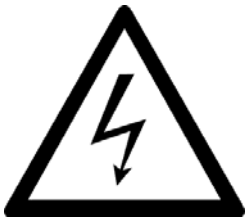
Appendix A

Appendix B

Appendix C

Appendix D

IMPORTANT SAFETY INSTRUCTIONS



The lightning flash with arrowhead symbol within an equilateral triangle (High Voltage Symbol) is intended to alert the user to the presence of uninsulated “dangerous voltage” within the enclosure of the temperature controller that may be of sufficient magnitude to constitute a risk of electric shock.

The exclamation point within an equilateral triangle (Caution Symbol) is intended to alert the user to the presence of important operating instructions in the literature accompanying the equipment.

For customers in Europe:
The crossed-out wheelie bin (WEEE Directive Symbol) indicates that this equipment shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for recycling of electrical and electronic equipment. By ensuring this equipment is disposed of correctly, you will help prevent damage to the environment and human health. The recycling of materials will also help to conserve natural resources.

Read all instructions for use and installation in the user’s manual for the temperature controller and the user’s manual for the Harrick Scientific temperature-controllable accessory to be used with the temperature controller. The temperature controller is intended for use only as described in these documents and should not be used for other purposes. In particular, the temperature controller should be used with Harrick Scientific accessories only. Use of the equipment in a manner not described in the instructions will void the warranty and may impair protection provided by the equipment.

Keep all instructions near the equipment in a safe place. Contact Harrick Scientific if additional copies are required. Heed all warnings in the instructions. Follow the steps outlined in the instructions.

Use the equipment indoors under typical light industrial and laboratory conditions only. See the section, “**SPECIFICATIONS**,” below. Make sure that the temperature controller is operated in the temperature and humidity ranges given.

To prevent fire or shock hazard, do not place objects filled with liquids, such as beakers, flasks, or cups, on the temperature controller. To reduce the risk of fire or electric shock, do not expose the equipment to rain, moisture, or condensing humidity. Clean the equipment with a dry cloth only.

Do not block any of the ventilation openings on the sides of the enclosure. Place the temperature controller in a location with adequate ventilation. Allow adequate space around the

temperature controller to ensure proper air circulation. Do not cover the temperature controller with papers, cloths, etc. in order not to obstruct heat radiation from the chassis enclosure or ventilation through the holes in the sides of the chassis. Occasional vacuuming of the ventilation openings is recommended to ensure proper ventilation. Never allow liquid or solid objects to fall into the ventilation openings. If any liquid or solid object falls inside the temperature controller, unplug the temperature controller immediately and have it checked by Harrick Scientific before operating it further. Never push objects of any kind into the temperature controller through the ventilation openings as they may come in contact with dangerous voltage points or short out parts that could result in a fire or electric shock.

To avoid electrical shock, do not open the enclosure. Do not attempt to change the input AC voltage setting. Contact Harrick Scientific for all servicing. Servicing is required when the equipment has been damaged in any way, such as when liquids or objects have fallen into the equipment, the equipment has been exposed to rain or moisture, the equipment has been dropped, or the equipment is not operating normally. If, on delivery, you suspect that the equipment has been damaged, do not attempt to operate it. Contact Harrick Scientific. If, during the course of operation, you suspect that the equipment is not operating correctly, turn off the power and contact Harrick Scientific. Do not attempt to continue operation until the problem has been resolved.

Install the unit so that the Power and Heater switches on the front panel are easily accessible and so that the AC power cord can be unplugged from the outlet immediately in the event of trouble. Use only the power cord supplied with the temperature controller. Do not attempt to defeat the purpose of the ground connection by altering the AC outlet plug on the cord in any way. The unaltered plug is required for grounding and safe operation of both the temperature controller and the Harrick Scientific accessory connected to it. If the power cord becomes damaged or lost, contact Harrick Scientific or an authorized distributor for a replacement. Do not use the AC power cord if it is damaged, as doing so may result in an electric shock or fire. Do not put anything heavy on the AC power cord. Keep the power cord away from heat sources. Do not place the power cord where it can be easily walked on, pinched, bent, twisted, or tripped over. Do not allow anything to rest on or roll over the cord. To disconnect the power AC cord from the outlet, grasp the plug itself; never pull the cord. Disconnect from the wall outlet first. Do not touch the AC power cord and its plug with wet hands as this may cause electric shock. Make sure that one end of the power cord is firmly installed in the back of the temperature controller and that the other end is firmly installed in the AC outlet. Do not overload the same AC power outlet. Unplug the AC power plug and clean it occasionally to avoid dust from accumulating. While cleaning, look for signs of damage. A damaged AC power cord should never be used. Contact Harrick Scientific or an authorized distributor for a replacement.

Take measures to prevent the temperature controller from toppling over and causing injury or damage to the equipment and property. Never install the unit on unstable and/or uneven surfaces. Care should be taken to install the temperature controller where it cannot be pushed, pulled over, or knocked down.

The mains voltage to be used must be the same as that specified on the rear panel. Using this unit with a different voltage is dangerous and may cause a fire and/or electric shock.

Unplug the temperature controller during lightning storms or when unused for long periods of time.

Before moving the temperature controller, turn off the power from the front panel, remove the AC plug from the outlet, and disconnect all other electrical connections.

The set point of the temperature controller entered by the user should not exceed the maximum temperature specified for the accessory being used. (The set point is displayed in the bottom (green) digital display.) This user's manual and the user's manual of the accessory being

connected should be consulted for this information. Contact Harrick Scientific if any questions on this point arise before attempting to use the temperature controller with any Harrick Scientific accessory. Only Harrick Scientific accessories should be connected to the temperature controller.

The user should ensure that the correct fuses are installed in the back panel of the temperature controller before attempting operation. In particular, different fuses are generally required in the "HTR" (Heater) position on the back panel depending on the accessory being used. This information is included in the Harrick Scientific user's manual. Before changing or examining any fuses in the temperature controller, the AC cord should be disconnected from the mains supply.

During auto-tuning and routine operation of the temperature controller, the top (red) digital display, which shows the actual temperature, should be seen to increase until it reaches the set point, shown in the bottom (green) digital display. If the temperature does not start to increase from its initial reading, check to make sure that the heater switch on the front panel is on. If the heater switch is on, turn the power off to the temperature controller and check to see if the heater is defective as discussed in the user's manual. If it is, contact Harrick Scientific for a replacement heater or heater assembly. (If you have a multiple heater configuration and only one of the heaters is defective, then the temperature may reach some intermediate level between the initial temperature and the set point. In this case, check both heaters as discussed in the user's manual and call Harrick Scientific for a replacement heater or heater assembly.) If the heaters are OK, check to see if the heater fuse has blown. If it has, contact Harrick Scientific. If the heaters and fuse are OK, then the thermocouple of the accessory may not be in thermal contact with the accessory. Call Harrick Scientific for assistance.

Be sure to read the Troubleshooting section of the user's manual before concluding that servicing by Harrick Scientific is required. Prior to calling Harrick Scientific, be sure to have the information in the "**OWNER'S RECORD**" section, below, ready.

SPECIFICATIONS

Dimensions:	7.3 " (h) x 8.0" (w) x 10.5" (d) 18.5 cm (h) x 20.3 cm (w) x 26.7 cm (d)
Weight:	17.2 lb 7.8 kg
Voltage:	Model ATK-024-3 100-130 VAC Model ATK-024-4 220-240 VAC
Frequency:	50-60 Hz
Power:	3.0 Amperes, maximum
Temperature:	64 – 95 ^{o}F 18 – 35 ^{o}C
Relative Humidity (non-condensing):	80%, maximum
Ingress Protection:	IP20
Mechanical Impact Resistance:	IK08

OWNER'S RECORD

The model and serial numbers are located at the rear of the unit. Record the model number and serial number in the spaces provided below. Refer to them whenever you call Harrick Scientific regarding this equipment.

Model No.: ATK-024-_____

Serial No.: ATK024 _____

TECHNICAL SUPPORT

For questions regarding operation, servicing of this equipment or for additional information, contact our Technical Support Center at 800-248-3847 between 9:00 AM and 5:00 PM EST; or email your questions to: techsupport@harrickscI.com.

UNPACKING

Before installing the automatic temperature controller (ATC) make sure all the parts on the included check list are present. If any parts are missing or damaged, contact Harrick Scientific immediately.

FEEDBACK

Your comments and suggestions are welcome. Please send them to:

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ABOUT THE ATK

The Temperature Controller can be programmed to reach a desired temperature or for temperature profiling. The controller automatically determines the best settings for optimal heating based on the thermal response of a system. It features two K-type thermocouple inputs and one 24V heater output, allowing regular or cascade operation. Single loop control is used for accessories with only a sample thermocouple. Accessories equipped with a sample and heating/cooling block thermocouple use cascade or double loop control. Cascade control minimizes potential damage to system components, allows for over sizing heaters for optimal heating rates and extends heater life by reducing thermal cycling.

This manual contains only “quick start” instructions. For detailed instructions see the included Watlow manual.

ENVIRONMENTAL CONDITIONS

The Temperature Controller is intended for use in light industrial and laboratory environments.

GETTING READY

Familiarize yourself with the temperature controller by referring to Figures 1, 2, 3 and 4.

Figure 1 • Temperature Controller Front View

Figure 2 • Temperature Controller Back View

Figure 3 • Front Panel Detail

Figure 4 • Accessories

GETTING STARTED

Sign onto your computer as an administrator to install the software for the USB to RS-485 adapter (P/N ATC-USB-485) and the Watlow EZ-Zone Configurator.

USB to RS-485 ADAPTER INSTALLATION

- Install the USB to RS-485 port converter adapter as per the supplied manufacturer's quick start instructions. Proceed to verify installation and communication port ID with the Device Manager. Note the port ID. Then continue here.

WATLOW DRIVERS AND SOFTWARE INSTALLATION

- Install the Watlow Drivers and Software from the Harrick USB flash drive. It should run automatically.
- Right-click on Software. Select EZ-Zone, followed by EZ-Zone Configuration, and Extract Files and Install to Local Drive.
- Follow the step-by-step on-screen instructions to complete the installation.

FUSE INSTALLATION

- On the back of the Temperature Controller, use a flat-bladed screwdriver to open the HTR fuse. Insert the screwdriver and turn counterclockwise until the fuse holder spring-releases.
- Select the appropriate fuse for the accessory, as listed in Appendix A, from the provided fuse pack.
- Insert the fuse into the holder
- Slide the holder back into the controller.
- Using a flat-bladed screwdriver, push the fuse holder in and turn clockwise until it engages.

ELECTRICAL CONNECTIONS

- Plug the 9-pin serial connector from the RS-485 adapter into the COMM connector on back of the Temperature Controller.
- Connect the black plug from the accessory into the black socket in the front of Temperature Controller.
- Plug the thermocouple (single loop control) or the sample thermocouple (double loop control) into the TC1 connector on the Temperature Controller.
- If the accessory has only one thermocouple, plug the bridge (yellow connector supplied in the original fuse pack) to TC2 for single loop control.
- If the accessory has two thermocouples, plug the heating block thermocouple into TC2 for double loop control.

POWERING UP

- Turn on the heater switch.
- Turn on the power switch, keeping an eye on the lower display.
- If the lower display shows the temperature, press the ▼ until temperature is at or below room temperature.

CAUTION:
Leave the heater switch on during operation. If this switch is turned off, turn the power off, turn the heater back on and then turn the power back on to restore a reasonable set of operating parameters.

FACTORY SET UP

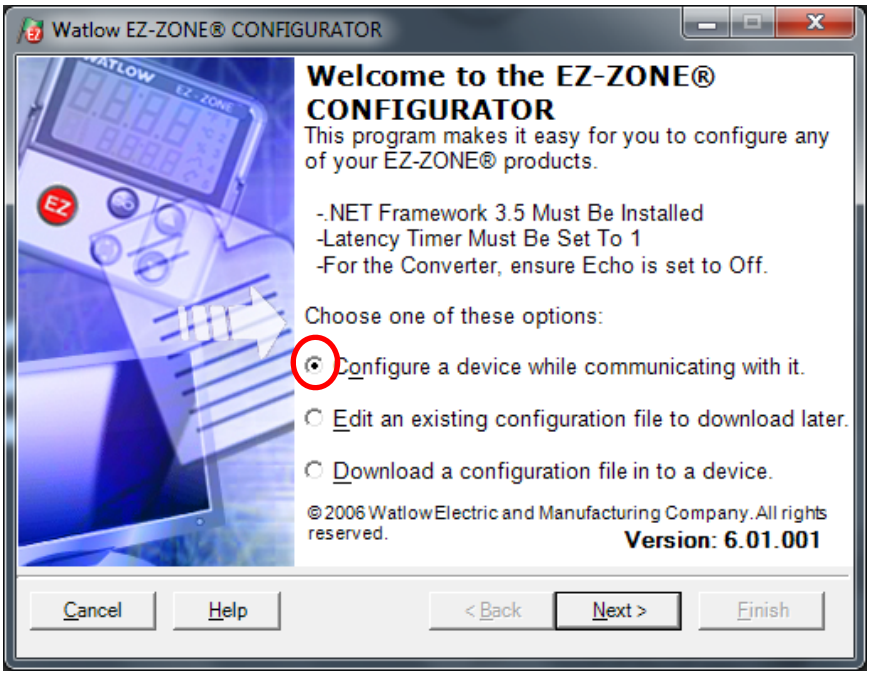
All Temperature Controller are tested at our facility prior to shipment. If the Temperature Controller was ordered with a Harrick accessory, the Temperature Controller was set up, autotuned and heated with that accessory. In most cases, this should be sufficient for operation and it is only necessary to adjust the Set Point using the to begin operation.

NOTE: *If the Temperature Controller has been set up at our factory for the accessory, the settings of the controller can be optimized for your particular experiment by autotuning. Skip to the Autotuning section of this manual and proceed from there.*

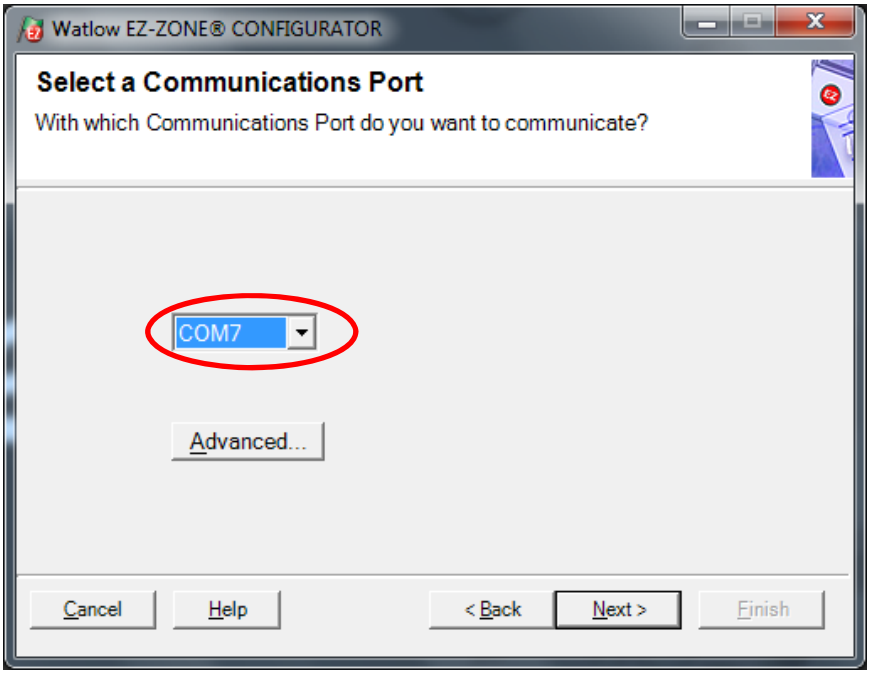
SETTING THE WATLOW DEFAULTS

To load the parameters from the included USB flash drive, the controller needs to be in its Watlow default settings.

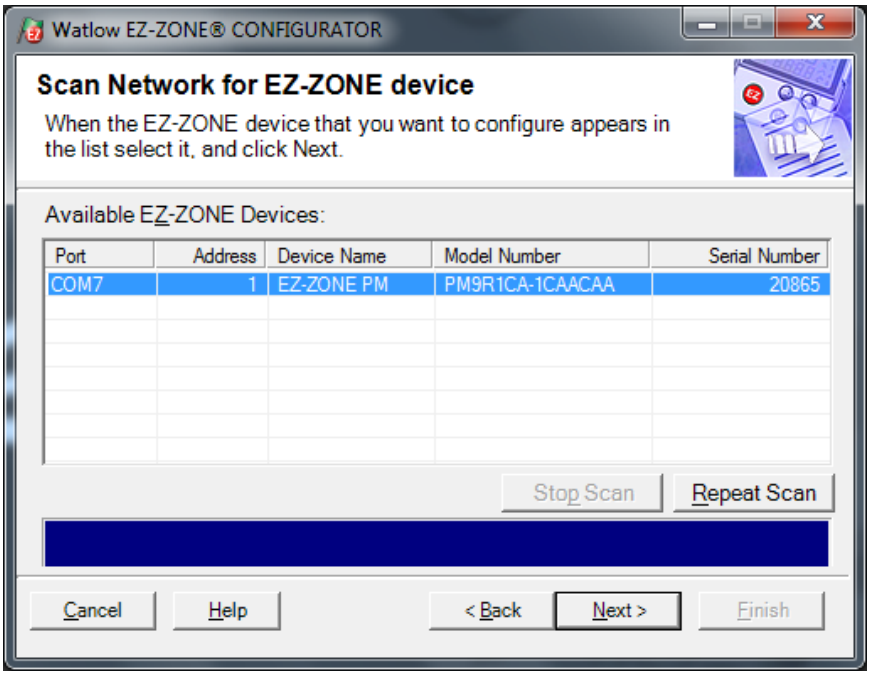
- Open the Watlow EZ-Zone Configuration if it is not already open.
- Select "Configure a device while communicating with it" and click on NEXT.



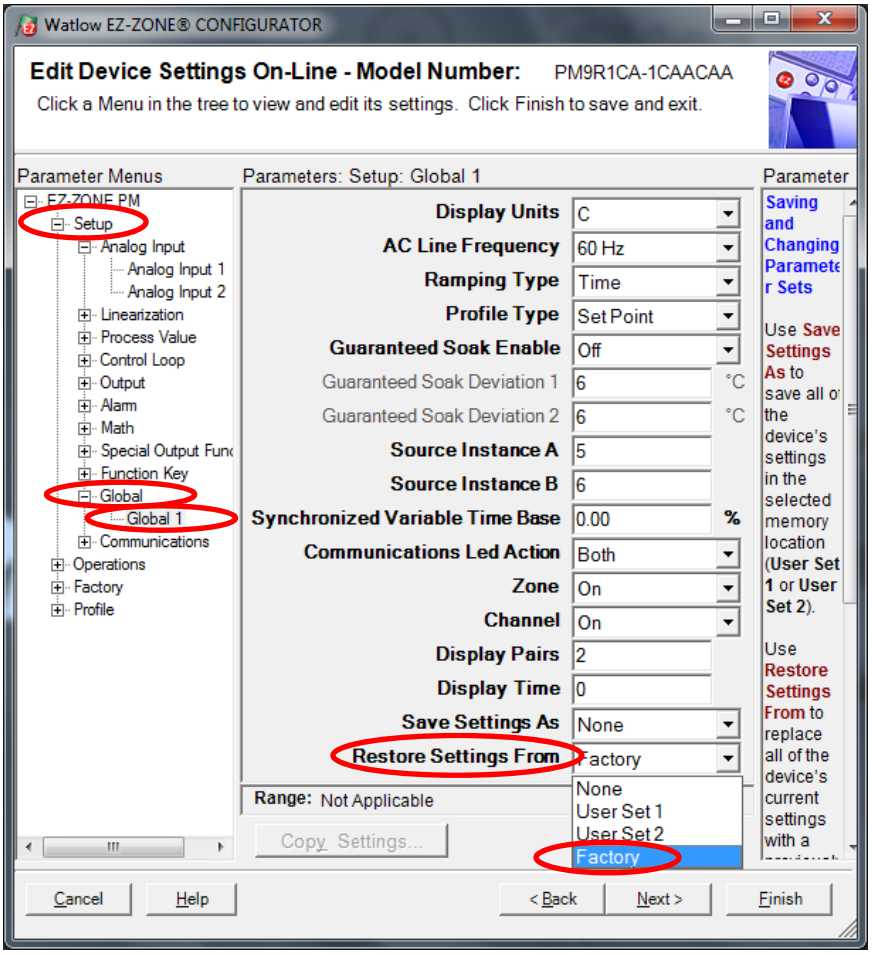
- From the drop-down list, select the port ID to which the USB adapter is connected. Then select NEXT.



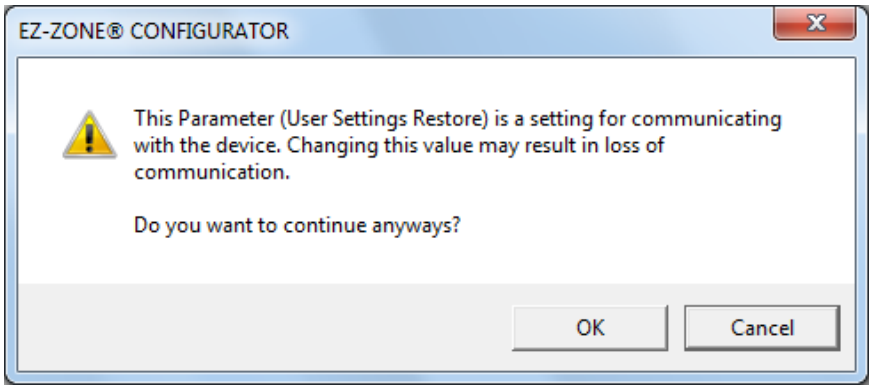
- Select the port from the list and click on NEXT to continue.



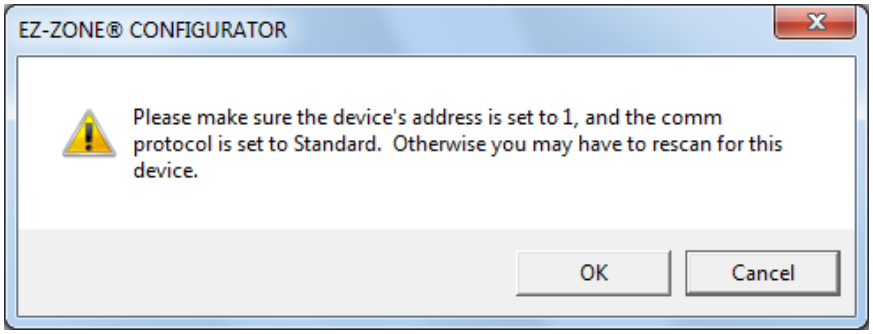
- Open the SETUP menu
- Choose GLOBAL submenu within the SETUP menu. GLOBAL 1 will be automatically selected.
- From the RESTORE FACTORY SETTINGS FROM drop-down menu, select FACTORY.



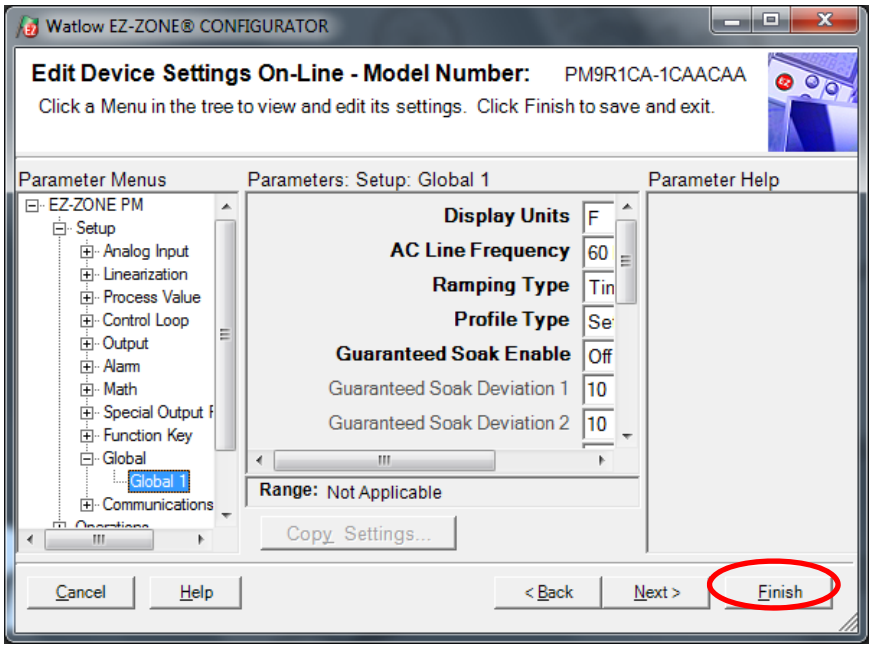
- Select OK to continue.



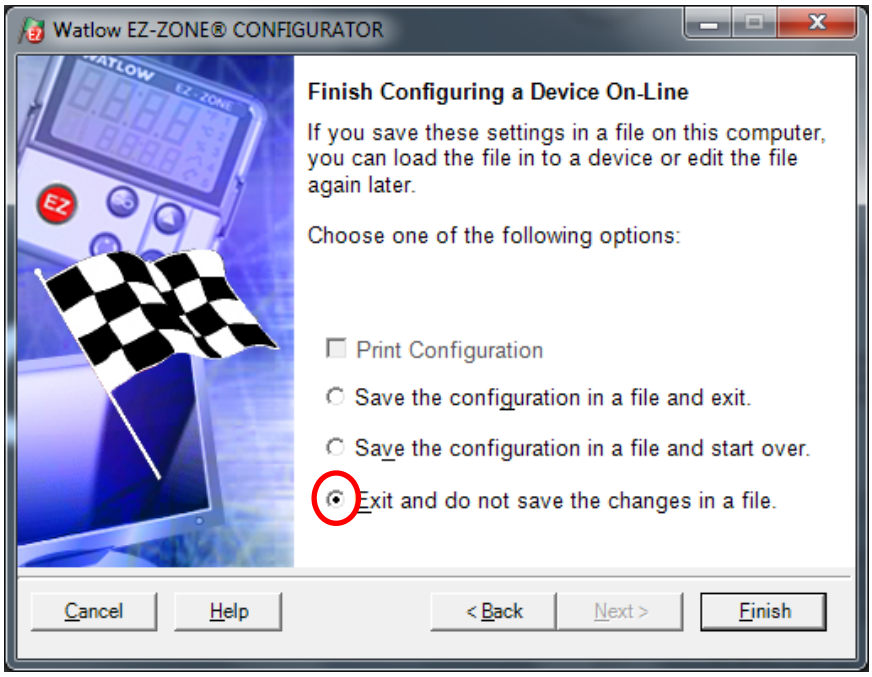
- Select OK to continue.



- Then select FINISH.

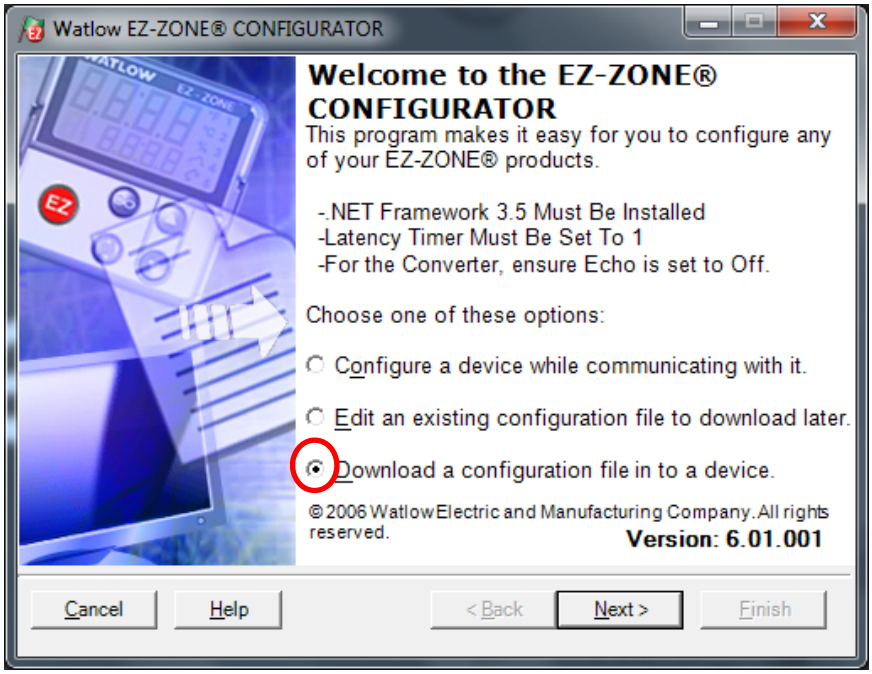


- Then select EXIT AND DO NOT SAVE THE CHANGES IN A FILE.

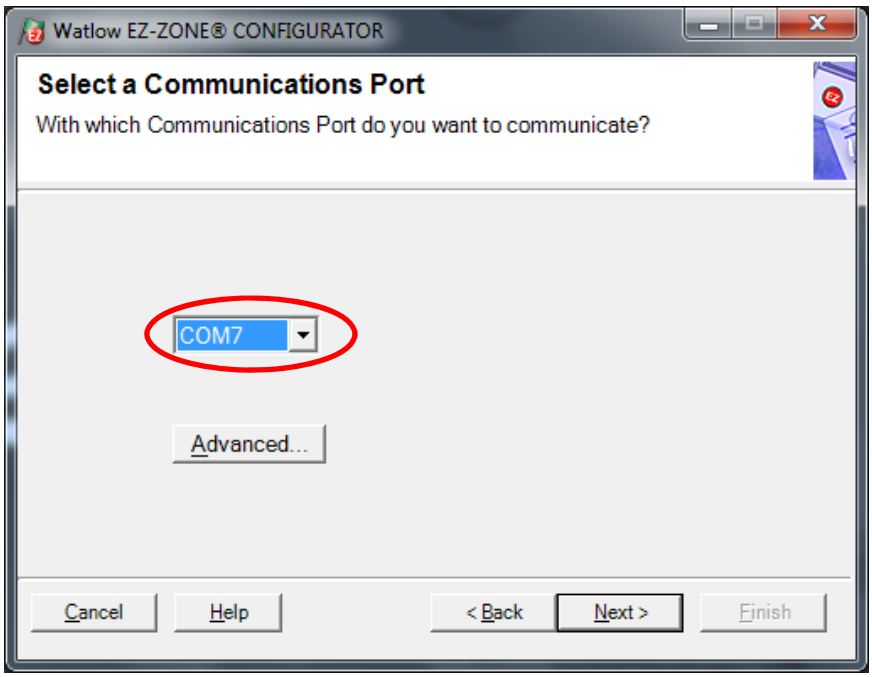


LOADING PARAMETERS

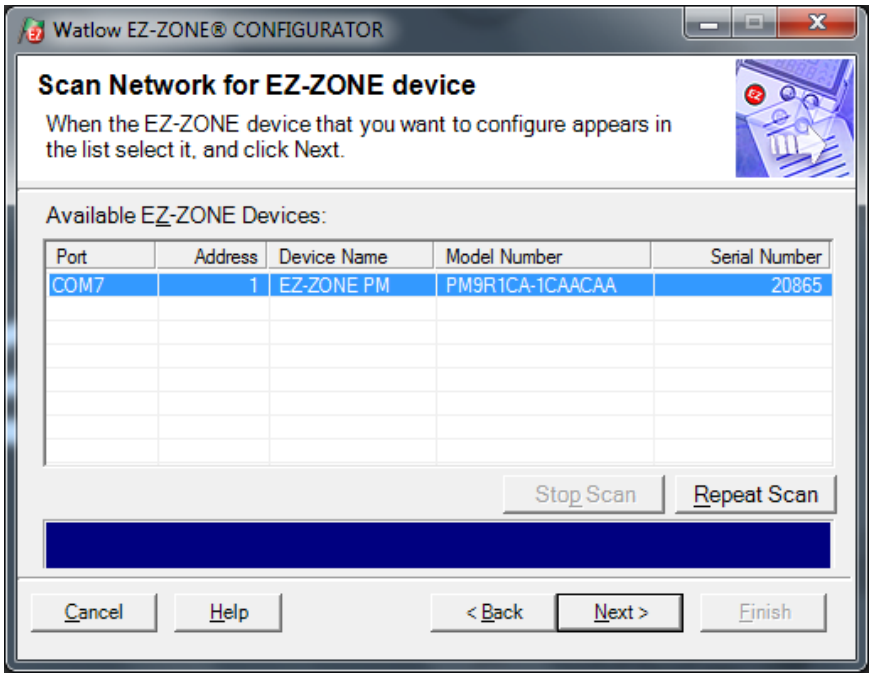
- Insert the supplied USB flash drive.
- Open the Watlow EZ-Zone Configuration if it is not already open.
- Select “Download a configuration file to a device.”



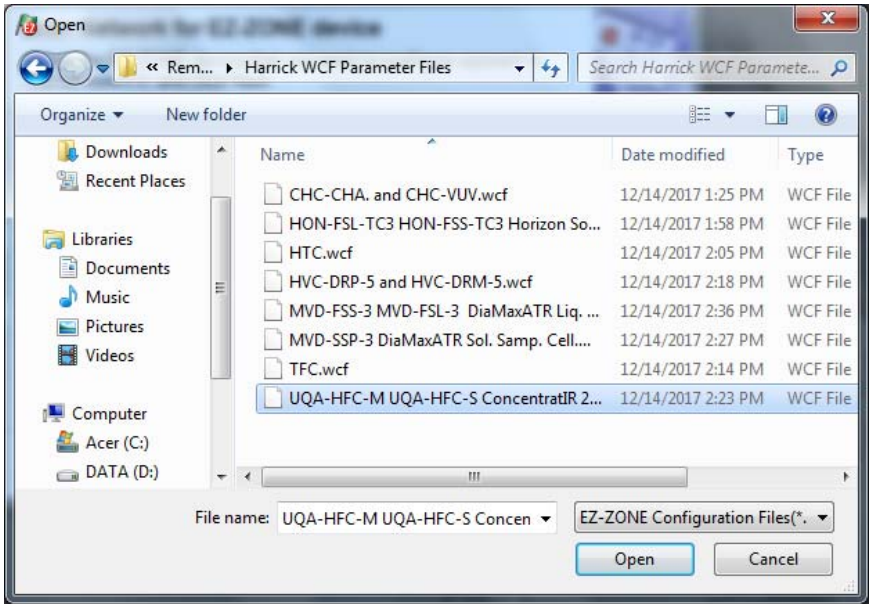
- From the drop-down list, select the port ID to which the USB adapter is connected.
- Then select NEXT.



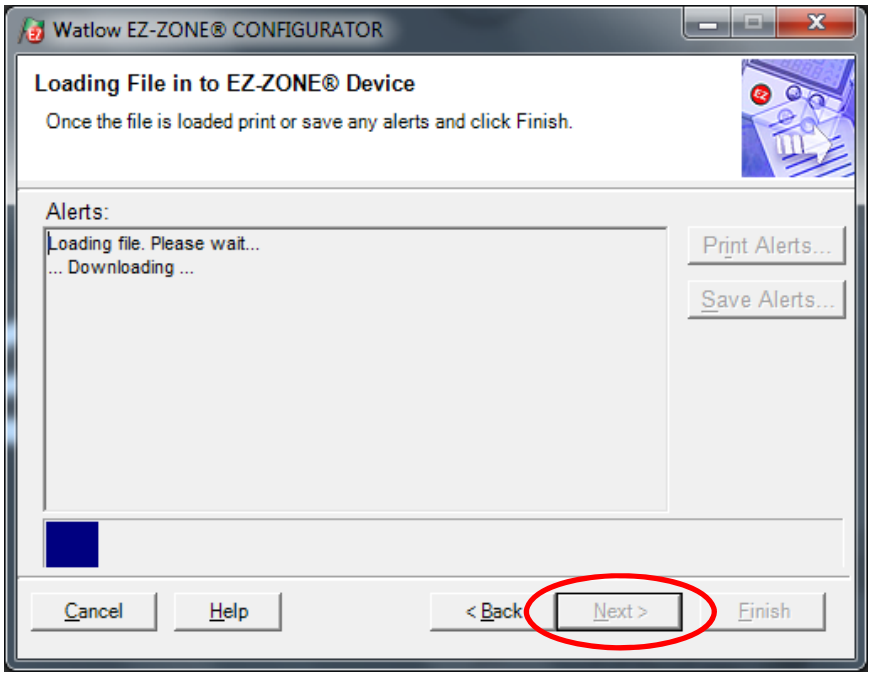
- Select the port from the list and click on NEXT to continue.
- If EZ Zone does not find a port or an error message occurs make sure that the USB adapter and cable are connected properly, confirm that the USB adapter is assigned to the port (see USB adapter instructions) and that the controller is set for standard bus communication (see Appendix B).



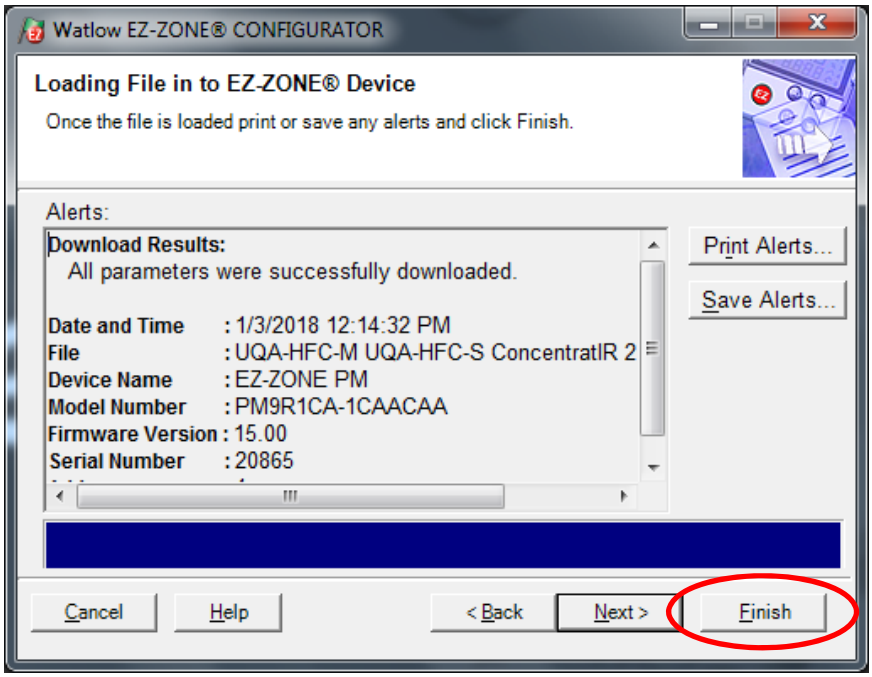
- Plug the Harrick USB flash drive into the computer.
- Page through the directory of the computer to open the USB flash drive.
- Choose the file that corresponds to the heated device part number.
- Then select OPEN.



- Wait while the file loads. When it finishes, select NEXT.

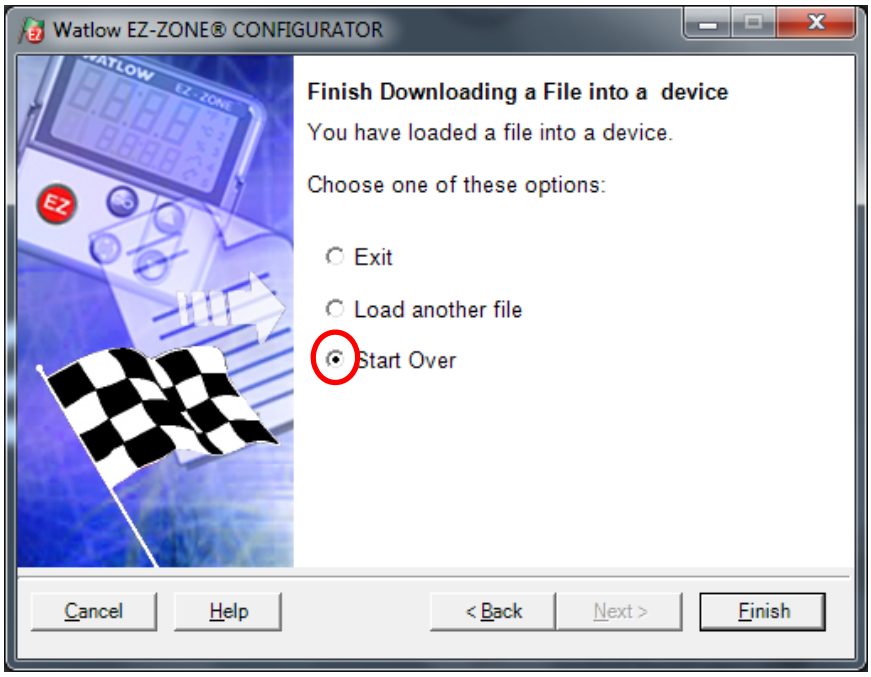


- Then select FINISH.



NOTE: *If an error message appears here, go back and set to the Watlow factory defaults If it continues to appear, contact Harrick Scientific Products, Inc.*

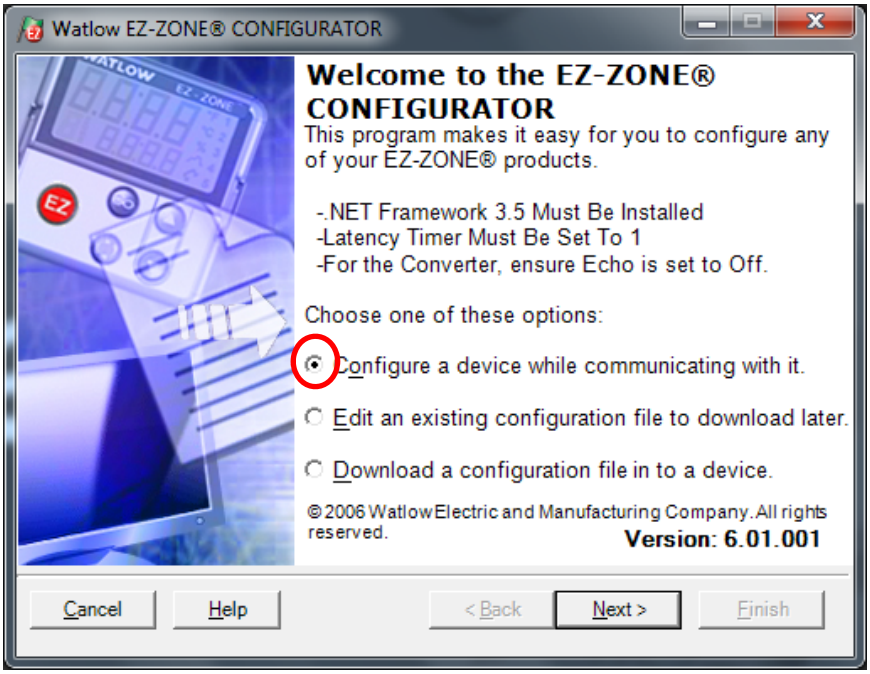
- Click on START OVER.



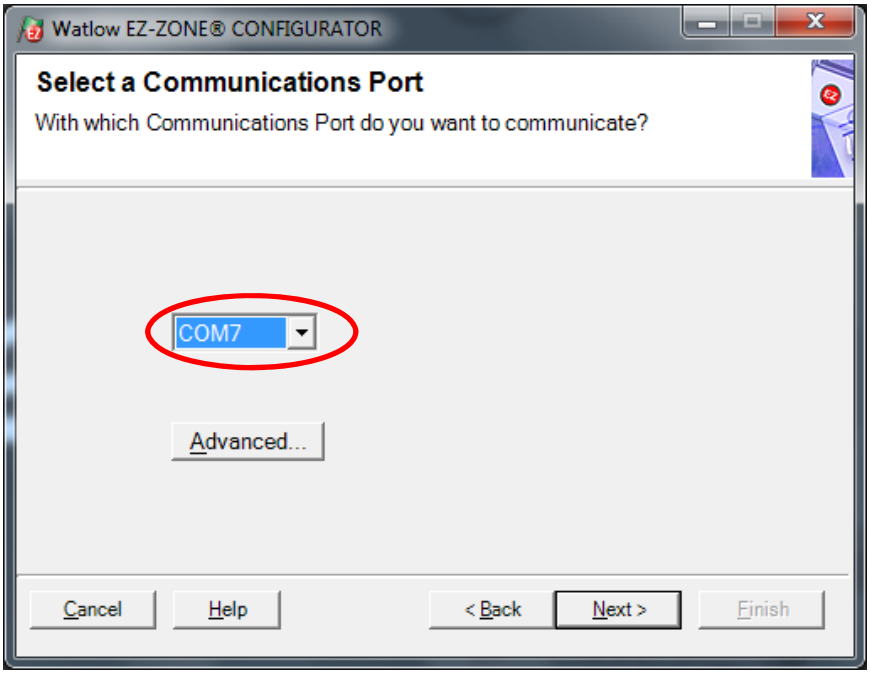
AUTOTUNING

For best performance, the controller should be autotuned as close to the experimental conditions as possible. Set up the heated device for operation in a similar configuration as the planned experiments: liquid or gas flowing through the cell, ambient fluid flowing through any cooling conduits, etc.

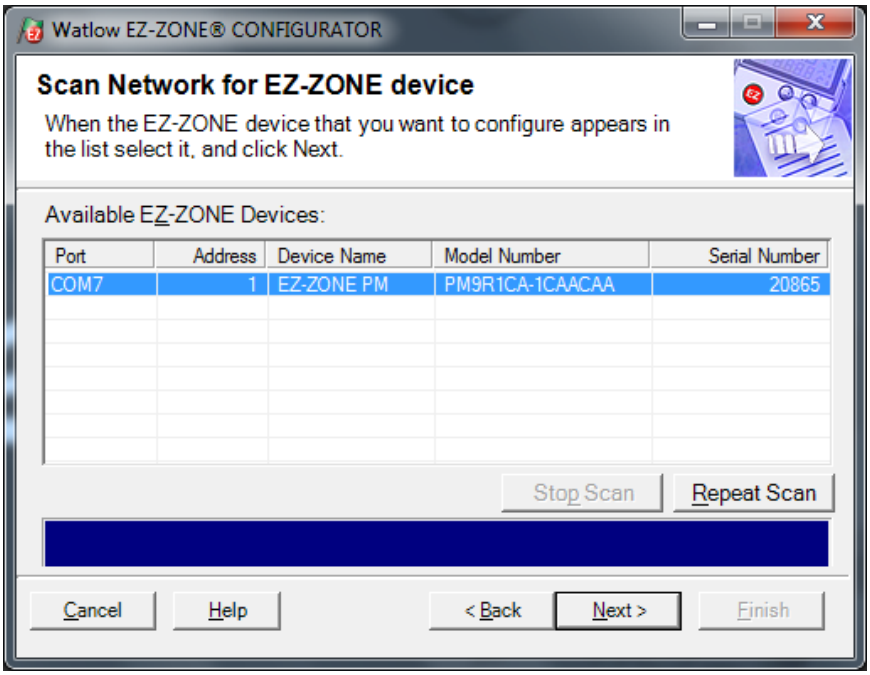
- Select “Configure a device while communicating with it” and click on NEXT.



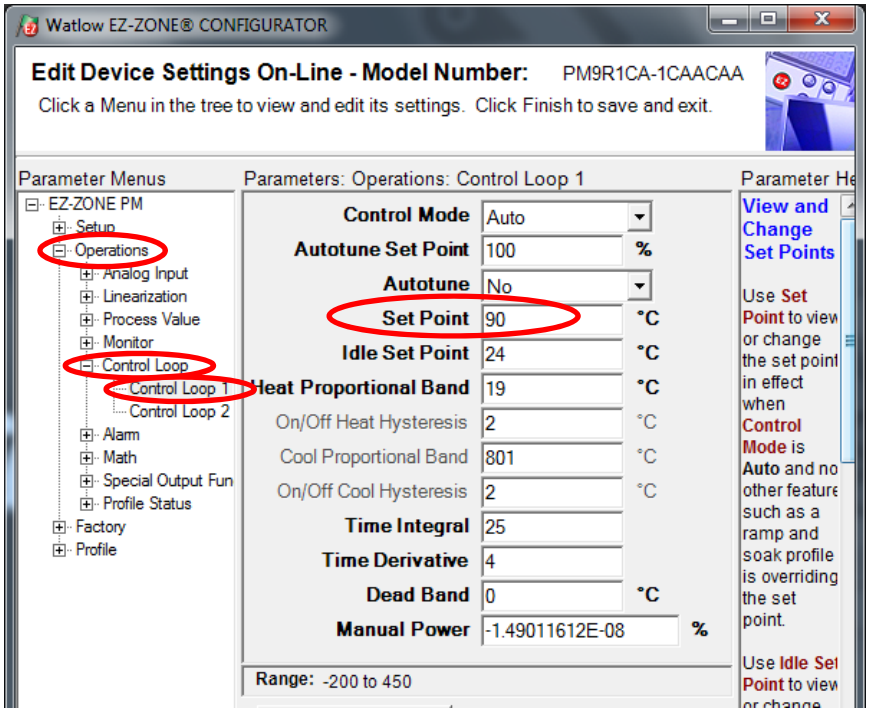
- From the drop-down list, select the port ID to which the USB adapter is connected. Then select NEXT.



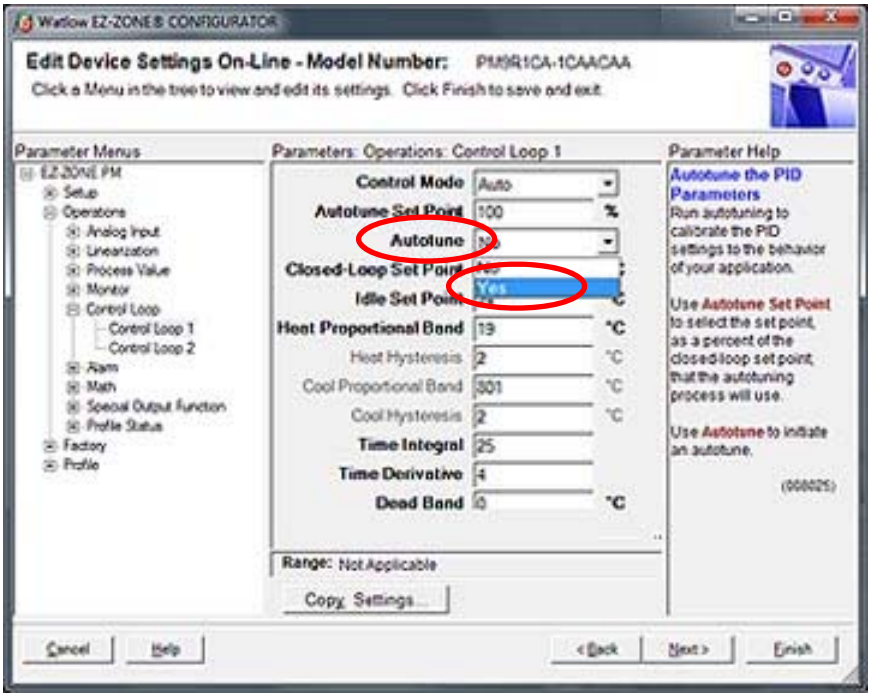
- Select the port from the list and click on NEXT to continue.



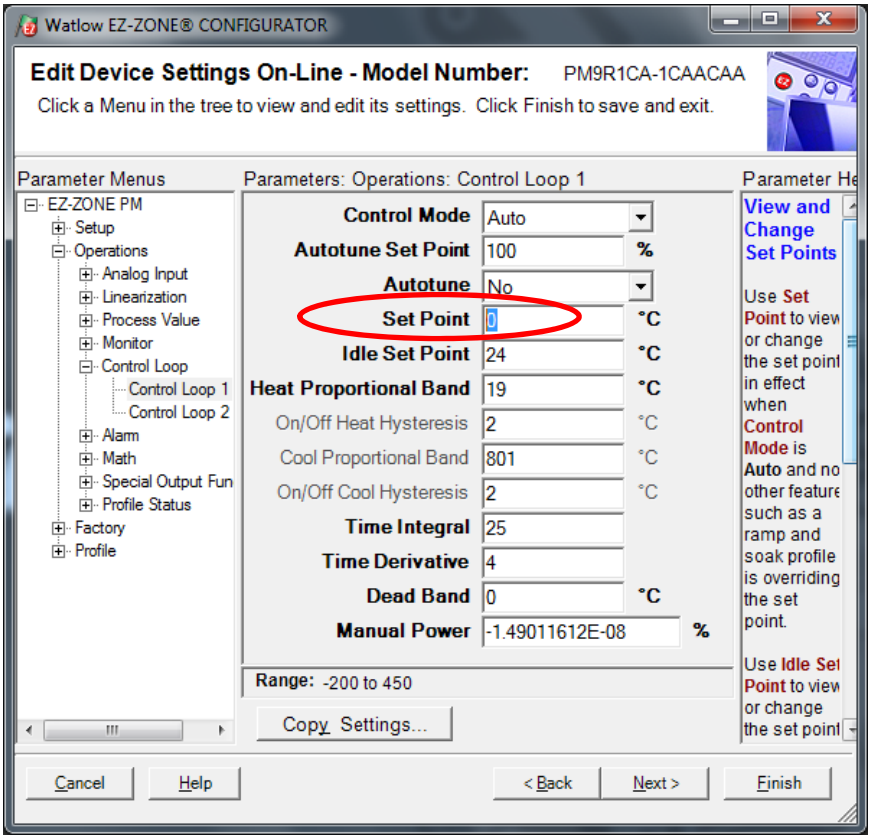
- Open the OPERATIONS menu
- Choose CONTROL LOOP 1 submenu within the OPERATIONS menu.
- Set the SET POINT to 90.



- Select YES from the AUTOTUNE drop down menu to initiate autotuning. During autotuning, the display will blink, alternating between the home display and tUn1/Attn.



- When the display stops flashing, reduce the SET POINT to slightly below ambient and allow the cell to cool.



OPERATION

To heat the cell, set the SET POINT to the desired temperature. Note that the up and down arrows on the keypad can also be used to change the temperature.

CAUTION:

Leave the heater switch on during operation. If this switch is turned off, turn the power off, turn the heater back on and then turn the power back on to restore a reasonable set of operating parameters.

GETTING STARTED

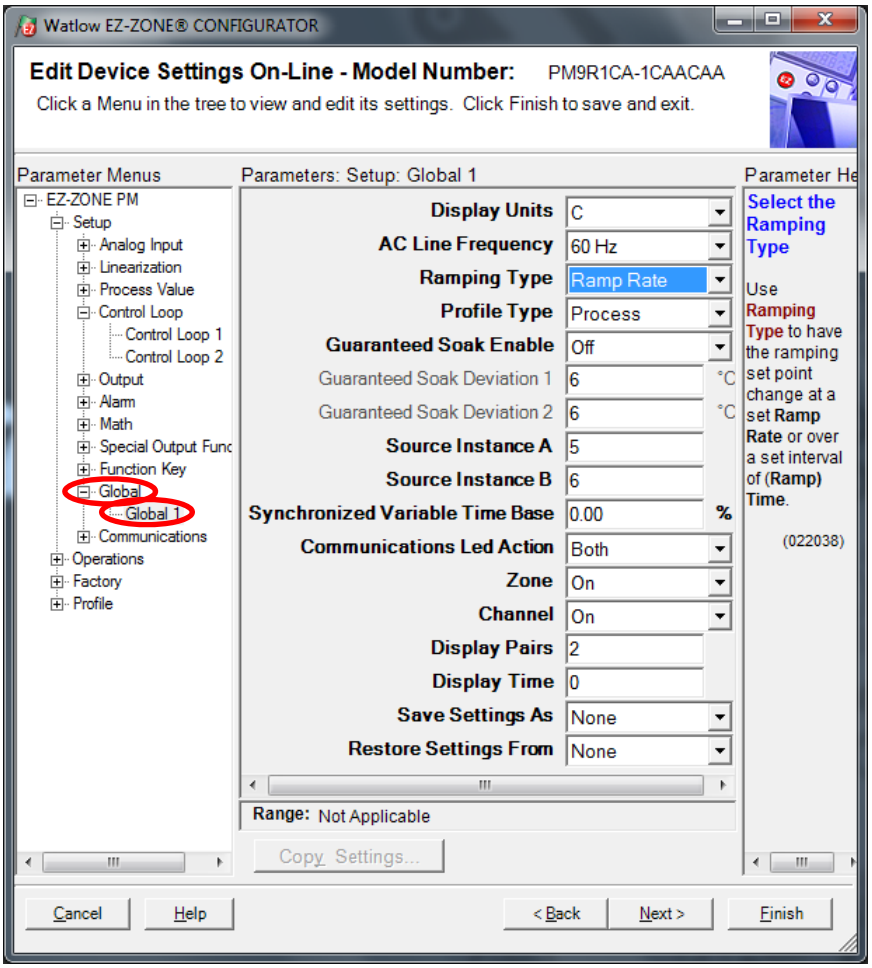
This Temperature Controller accommodates ramp and soak experiments with up to a total of 40 steps. This section gives an example of how to set up the controller for an experiment which heats to 90 °C at a rate of 1 °/min., soaks for 10 min. and then cools down.

Confirm that the Temperature Controller and heated device can successfully heat to a set point prior before setting up a profile.

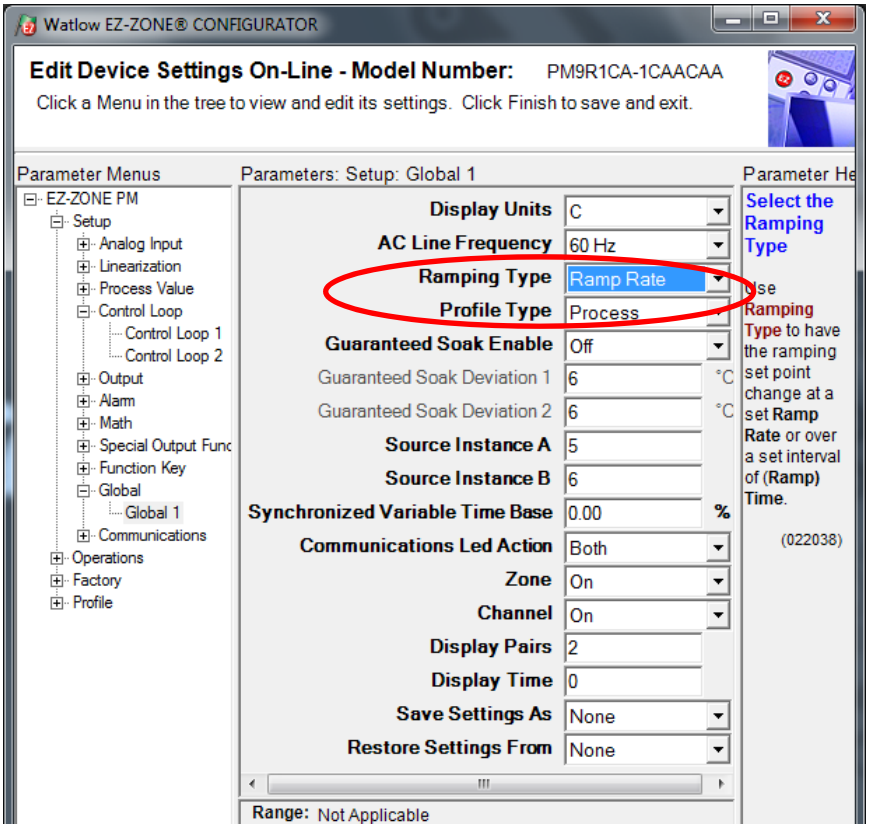
If the heated device only has one thermocouple, make sure the provided bridge (yellow male connector packaged with the fuses) or a thermocouple is connected to TC2

SET UP

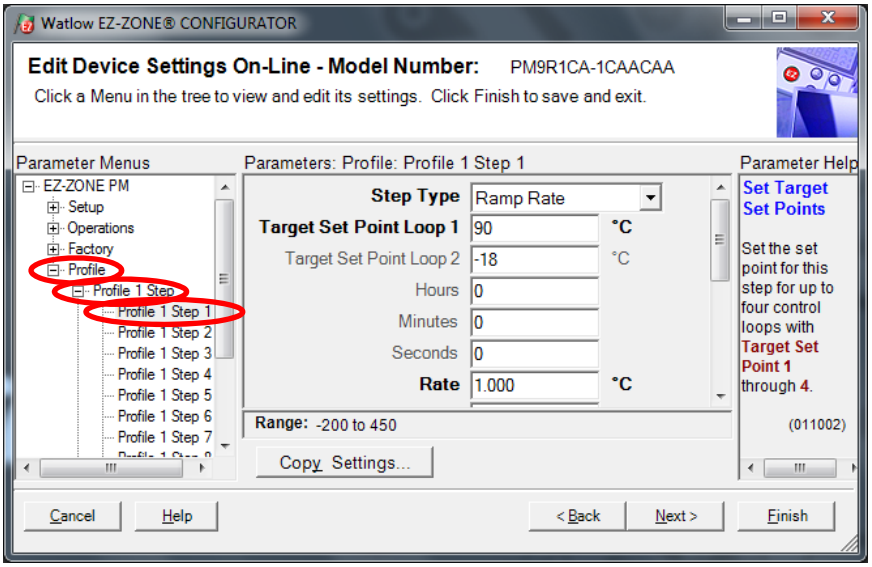
- Go to the GLOBAL menu.
- Select GLOBAL 1



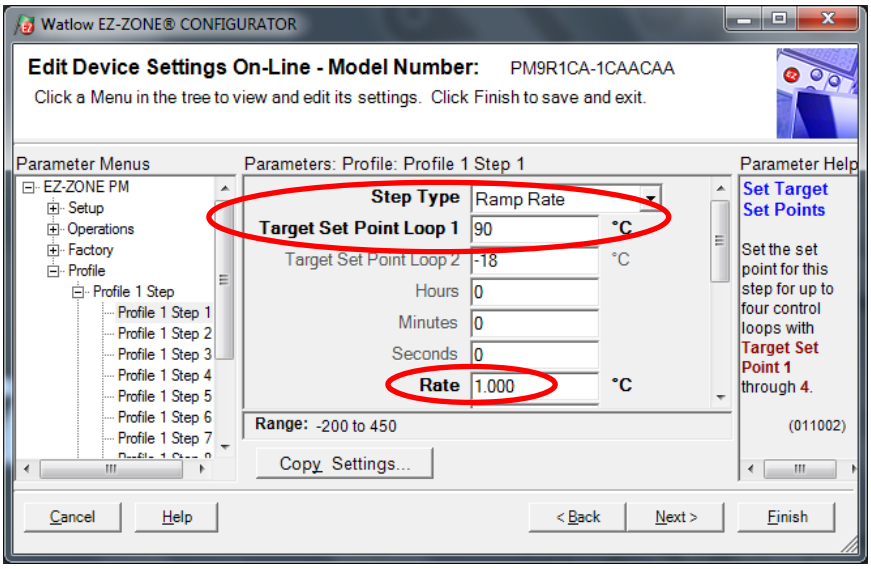
- Set the RAMPING TYPE to RAMP RATE from the drop down menu.
- Then set the PROFILE TYPE to PROCESS.



- Go to the PROFILE menu.
- Select the PROFILE 1 STEP to set up the first profile.
- Then choose PROFILE 1 STEP 1 to set up the first step of PROFILE 1.



- Select the RAMP RATE from the STEP TYPE drop down list.
- Enter the desired set point temperature (90 °C in this example) as the TARGET SET POINT LOOP 1.
- Set the RATE for desired ramp rate, in °C/min. (1.0 °C/min in this example)



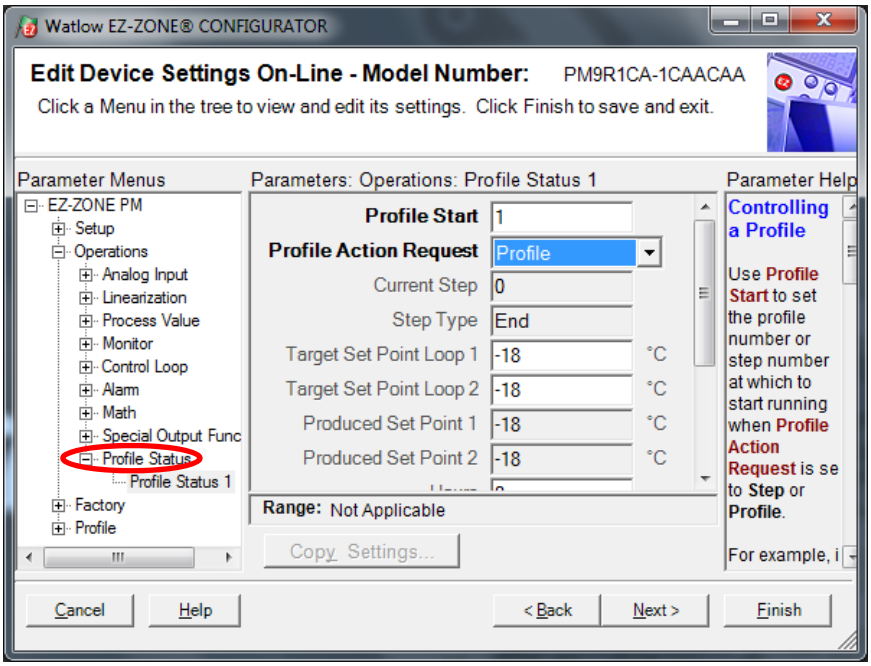
- Proceed to PROFILE 1 STEP 2.
- Select SOAK from the STEP TYPE drop down list.
- Set the TARGET SET POINT LOOP 1 to 90 to hold the temperature at 90 °C.
- Set the MINUTES to 10, to hold the temperature at 90 °C for 10 minutes

- Proceed to PROFILE 1 STEP 3.
- Select END from the STEP TYPE drop down list.
- Select OFF as the END TYPE to turn off the control mode and allow the heated device to cool.

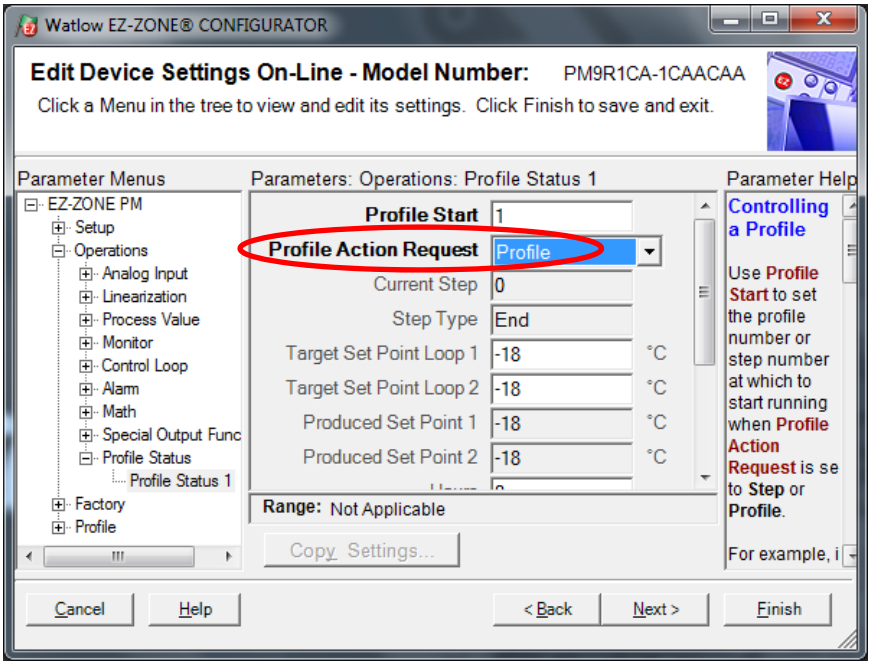
CAUTION:
Leave the heater switch on during operation. If this switch is turned off, turn the power off, turn the heater back on and then turn the power back on to restore a reasonable set of operating parameters.

OPERATION

- Go to PROFILE STATUS and choose PROFILE STATUS 1.



- Start the profile by setting the PROFILE ACTION REQUEST to PROFILE.



NOTES: *Several profiles, e.g. PROFILE 1 STEP and PROFILE 2 STEP, can be linked in order to generate multiple step ramp and soak experiments. The profiles run sequentially.*

The status of the profile can be monitored in the Profile Status window.

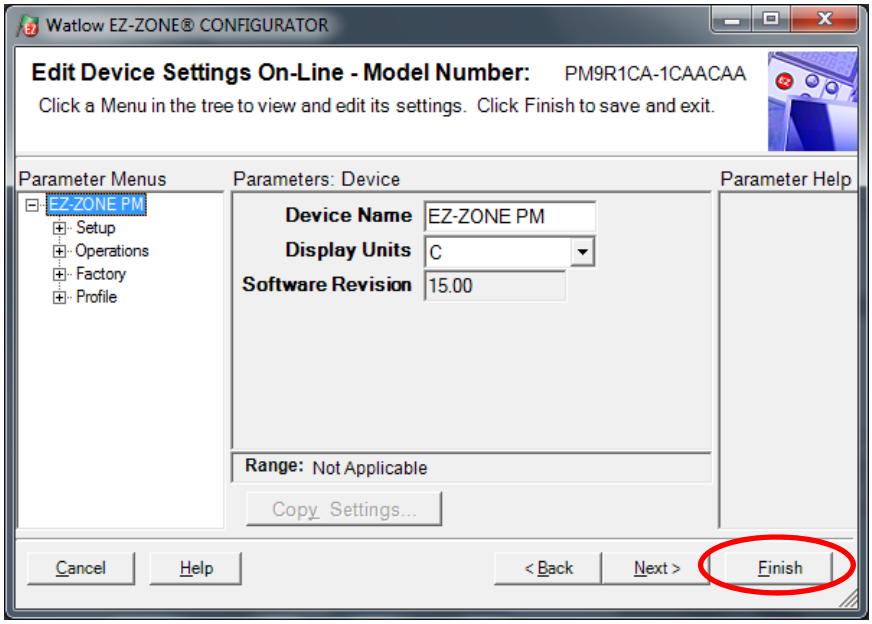
If the profile needs to be shut off before competing, set the PROFILE ACTION REQUEST to TERMINATE.

Once the profile is working, it can be saved for future use.

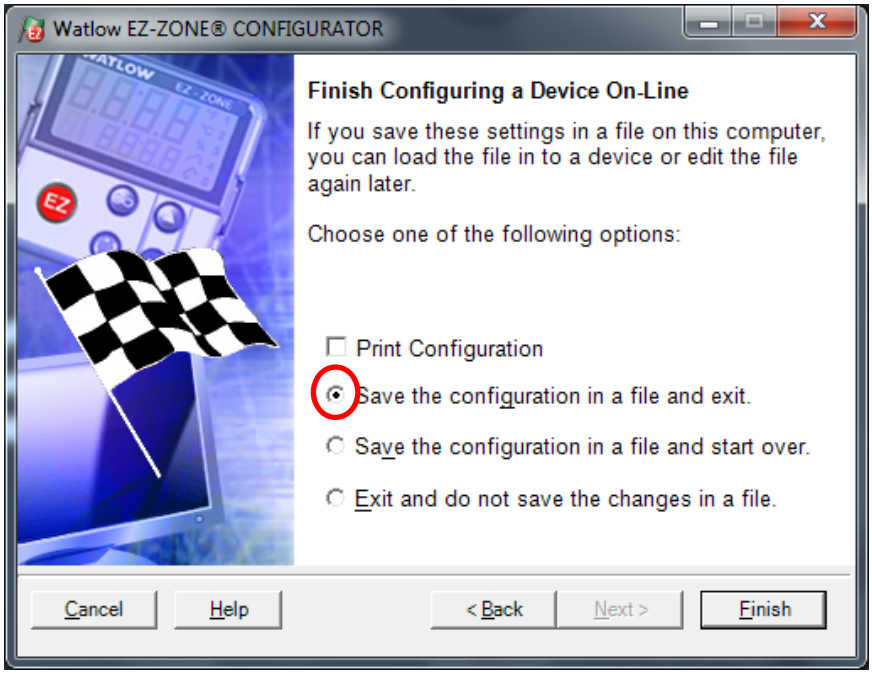
The separately offered TempLink software can be used for integrated temperature control and data collection.

SAVING THE PARAMETERS

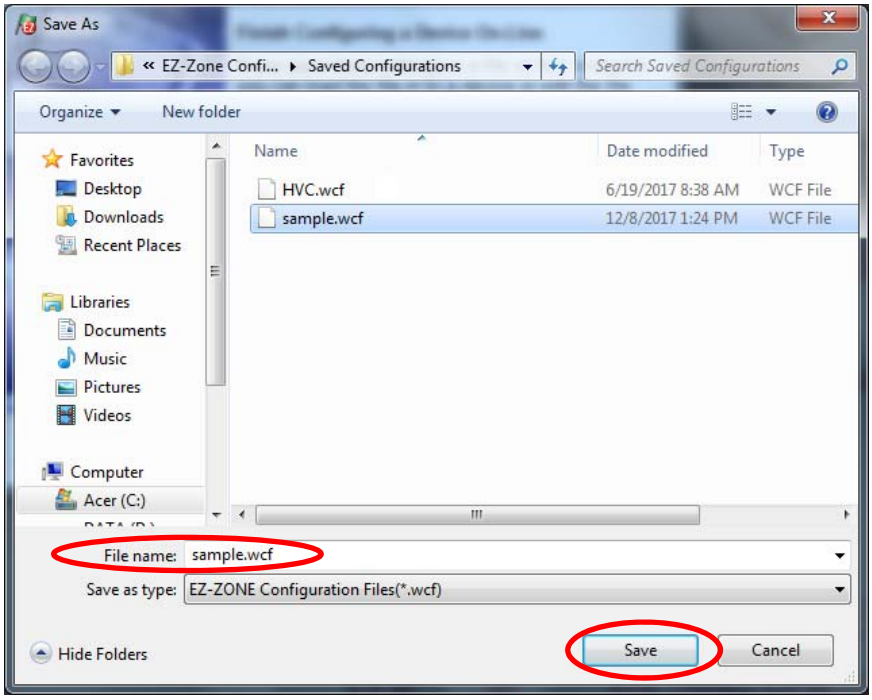
- To save the parameter file, click the FINISH button.



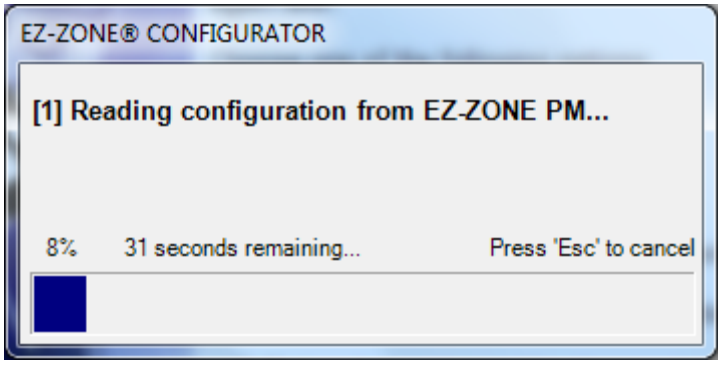
- Then select “Save the configuration in a file and exit.”
- Press NEXT.



- Navigate to the desired directory and enter a file name.
- Then click on SAVE.



- Wait for the EZ-Zone Configurator to save the file and exit.



REPLACING THE FUSES

To replace a fuse:

- Locate the appropriate fuse holder on the back panel (see Figure 2).
- Use a small flat blade screwdriver to rotate the fuse holder ¼ turn counter clockwise.
- Remove the fuse holder from the back panel.
- Gently pull the fuse out of its holder for inspection.
- Replace the fuse, if needed, based on the accessory with which the Temperature Controller will be used (see Table 1).
- Insert the fuse installed in its holder back into the appropriate hole in the Temperature Controller.
- Use a small flat blade screwdriver to rotate the fuse holder ¼ turn clockwise to secure the fuse holder in place.

NOTE: *Be sure to install the correct fuse for use with a particular accessory, as indicated in the table below.*

ACCESSORY	TEMPERATURE RANGE (°C)	SLOW-BLOW HEATER FUSE (HTR)
CHC	LN2-600	5A S-B
DER	LN2-500	8A S-B
FAS-TCC	0-200	5A S-B
FATIR	Room-175	5A S-B
HPL-TC	Room-260	8A S-B
HTC	Room-500	15A S-B
HVC-DRP-3, HVC-VUV-3	Room-600	5A S-B
HVC-DRP-4, HVC-VUV-4, HVC-MRA-4	Room-910	5A S-B
HVC-DRP-5, HVC-DRM-5, HVC-MRA-5, HVC-VUV-5	Room-910	5A S-B
MVD-FSL-3, MVD-FSS-3, MVD-SSP-3	0-200	5A S-B
RANGEIR	Room-175	5A S-B
RGR	Room-400	8A S-B
SEA-HLC	Room-100	3A S-B
SEA-HOT	Room-100	3A S-B
TFC	Room-260	8A S-B
TGC	Room-260	10A S-B
UNS-HOT	Room-100	5A S-B
HON-FSL, FLL, FSS, FLS	-10 to 190	8A S-B
UQA-HFC-M, UQA-HFC-S, UQA-HTC	Room-200	3A S-B

Table 1 • Heater Fuses for Various Accessories

FUSE POSITION	SLOW-BLOW FUSE TYPE	QUANTITY
Power Outlet	2A S-B	2
XFMR	4A S-B	1

Table 2 • Additional Fuses for the Temperature Controller

TROUBLESHOOTING

Front Panel Fails to Light

- Make sure the controller is off and unplug the power cord.
- Check if the power outlet fuses are blown (see Table 2 for the replacement fuses).

Communications Failure

If communication between the USB/RS-485 adapter cannot be established, confirm that that the controller is set for the standard bus.

- Hold down both arrow keys (▲▼) until A1 appears in the upper display and SEt is in the lower display. Note that oPEr will appear in the lower display prior to SEt.

Ai / SEt

- Depress ▲ until COM appears in the upper display.

COM / SEt

- Press the until PCoL appears in the lower display.
- Depress ▲ until Std shows in the upper display.

Std / PCoL

- Then push the ∞ key twice to return to the home display.

Confirm that the computer is running a compatible operating system. The EZ-Zone Configurator version 5.00.002 runs under Windows® XP Professional (32-bit) with Service Pack 2, Windows® Vista Professional (32-bit or 64-bit), or Windows® 7 Professional (32-bit or 64-bit).

Uncontrolled or Run-Away Heating

- Make sure the heater switch was not turned off. Turning off the heater switch at any time when the controller is active after autotuning can result in an uncontrolled heating. If it was, turn the power off, turn the heater back on and then turn the power back on to restore a reasonable set of parameters.
- Otherwise confirm that the parameters are set as recommended and reautotune if needed.

Unexpected Controller Behavior

If the controller is behaving unexpectedly, several causes are possible. Please check the following:

- Make sure the heater(s) are correctly connected and are operational.
- Make sure that the heater on/off switch was not turned off during operation. If it was, turn the power off, turn the heater back on and then turn the power back on to restore a reasonable set of parameters.
- Confirm that the thermocouples are connected correctly to the controller.
- Inspect the controller display to make sure it is not flashing an error message (Er) in the upper display. If there is an error message, please see the Watlow instruction manual (on CD) to determine the cause.
- Restore the original Harrick settings or the saved user settings.
- If this does not resolve the problem, contact Harrick Scientific.

CAUTION:
Leave the heater switch on during operation. If this switch is turned off, turn the power off, turn the heater back on and then turn the power back on to restore a reasonable set of operating parameters.

ATC Fails to Heat Device

- Make sure the controller is off and unplug the power cord.
- Check if the fuses are blown (see Tables 1 and 2 for a list of replacement fuses).
- Check if the heaters are still operational by measuring their resistance with an ohmmeter.

> ***CAUTION:***
> *Do not remove or replace any fuses unless the power switch on the front panel is off and the AC power cord is disconnected.*

To measure the resistance of the heaters:

- Disconnect the heater(s) from the controller.
- Connect an ohmmeter across the two pins on the heater connector as indicated in Figure 5.
- Heater failure is indicated by an open circuit or a short. A good heater will measure a few ohms, (see Table 3). If it is higher than indicated, the heater may not be able to achieve the maximum temperature and may need replacement.

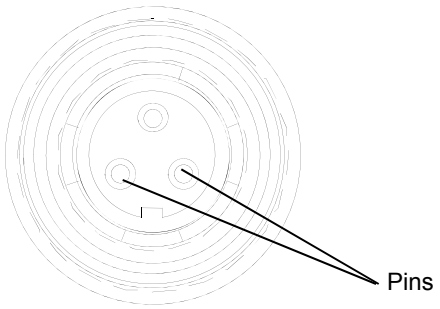


Figure 5 • Heater Connector of the Heated Accessory

ACCESSORY	APPROXIMATE RESISTANCE (ohms)
CHC	5.9
DER	3.0
FAS-TCC	6.2
FATIR	5.4
HPL-TC	3.0
HTC	2.5
HVC	5.9
MVD-FSL-3, FSS-3, SSP-3	5.9
RANGEIR	5.4
RGR	3.4
SEA-HLC	17.9
SEA-HOT	8.4
TFC	3.0
TGC	3.0
UNS-HOT	6.0
HON-FSL, FLL, FSS, FLS	4.0
UQA-HFC-M, HFC-S, HTC	5.9

Table 3 • Heater Resistance Values for Various Accessories

REPLACEMENT AND OPTIONAL PARTS

Fuses	ATC-FUSE
Thermocouple Bridge	ATC-BRG
TempLink Software	ATC-LINK-XX

HARRICK

CE

Declaration of Conformity

For

Harrick Scientific Products,Inc.

141 Tompkins Ave., 2nd Floor
Pleasantville, NY
10570, USA

For Compliance of:

Equipment: Automatic Temperature Controller
Model No.: ATC-024-4
Rated: 230VAC, 50Hz, 3A, Single Phase
Report No.: 9834-2S Rev1, 14030-1E

To the following Directive(s):

- 2014/35/EC – Low Voltage Directive
- 2014/30/EC – EMC Directive

To the following standard(s):

- EN 61326-1:2013
- EN 61000-4-3::2009
- IEC 61010-1 (Third Edition): 2010

Joseph Lucania 10/10/16

Harrick Scientific Products, Inc.
141 Tompkins Avenue, 2nd Floor, P.O. Box 277, Pleasantville, NY 10570
Ph: 914.747.7202, FAX: 914.747.7209, E-mail: info@harrickscI.com