

KE2Evap Bootloader Guide

Updating Firmware to Version 5.00

Introduction

Your KE2 Evaporator Efficiency (KE2 Evap) controller has the built-in capability to receive firmware updates over Ethernet. To perform this update over the network you will need to place your controller in bootloader mode, and then use the bootloader program provided by KE2 Therm, as described below.

Placing your controller in bootloader mode suspends normal controller operation & allows the controller to receive a firmware update from the bootloader program. The bootloader program runs on your local Windows PC/laptop, and will discover controllers in the same network that have been placed in Bootloader Mode. You can then apply firmware updates to your KE2 Evap via your wired network. Do not attempt to update controllers over Wi-Fi.

Getting Started

To perform a firmware update for your KE2 Evap controller, you will need:

- The **controller** you wish to update
- 110V/220V **power source** for the controller, as appropriate
- A Windows **PC/laptop** to run the firmware update utility
- The **bootloader program** downloaded from www.ke2therm.com (See Preliminary Steps on page 2).
- **Ethernet cable(s)**, to provide **wired** network connections between the controller, PC/laptop, & the KE2 Smart Gate (if used).
- (Optional) **KE2 Smart Gate** to provide network connections for the controller & PC/laptop.
- (Optional) **KE2 Edge Manager** (KE2-EM) and **KE2 Switch** to provide network connections for the controller & PC/laptop.

Table of Contents

Preliminary Steps	Page 2
Part 1A – Using a KE2 Smart Gate to connect to the KE2 Evap	Page 4
Part 1B – Using KE2-Edge Manager (KE2-EM) and KE2 Switch	Page 6
Part 1C – Connecting a computer directly to the KE2 Evap	Page 8
Part 2 – Access Controller Webpage	Page 10
Part 3 – Launch & execute the bootloader program	Page 13
Part 4 – Confirm the firmware update is installed properly	Page 15



KE2Evap Bootloader Guide

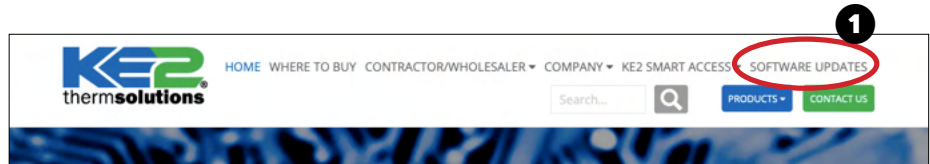
Updating Firmware to Version 5.00

Preliminary Steps

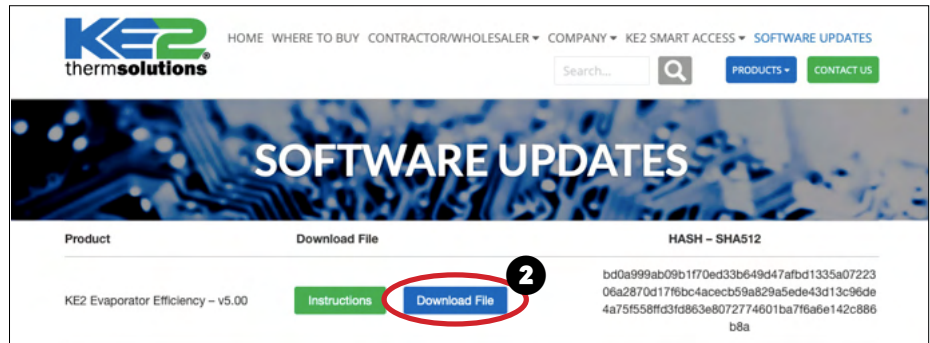
Before you begin the bootloading process, you will need to download and extract the bootloader program using the following steps:

DOWNLOAD AND EXTRACT THE BOOTLOADER PROGRAM

- 1 Go to **www.ke2therm.com** and click on the **Software Updates** tab.



- 2 **Download File** next to KE2 Evaporator Efficiency - v5.00" and select a location on your PC to save the file.



- 3 Find the downloaded zip (archive) file and open.

Windows 7, 8, 10 & 11 - double click the zip file.

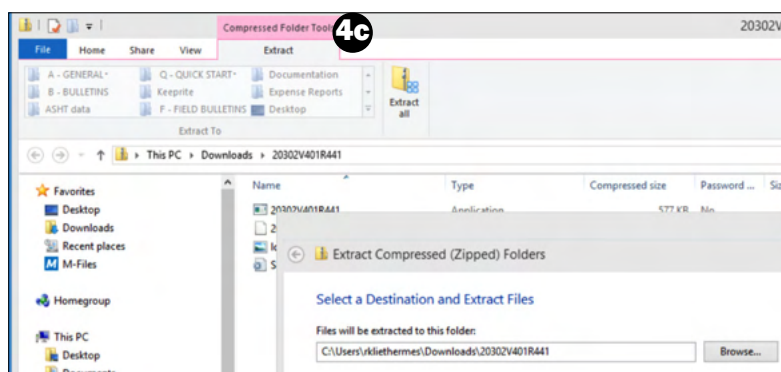
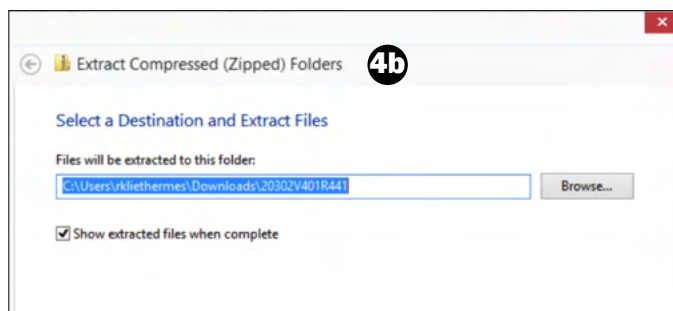
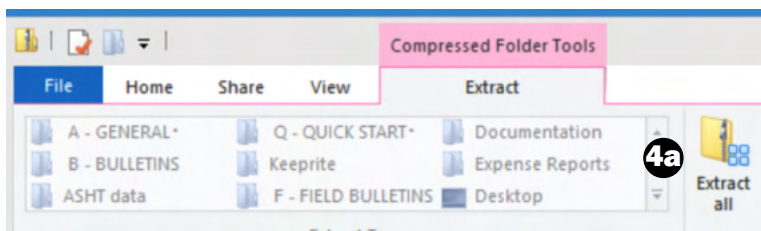
Windows XP - use a zip program such as winzip or 7zip to open the archive (zipped) file.

- 4** Extract the files to a location of your choice (extracting to the desktop is an easy location to find).

4a **Windows 8, 10, 11** - click **Extract all**.

4b **Windows 7** - click on **Extract all files** in the menu bar at the top of the window you opened in step 3.

4c **Windows XP** - extract the files using the program you selected in step 3.



- 5** Navigate to the newly created folder from Step **4**.

- 6** Verify the folder is the standard folder icon and not the icon with a zipper image.

- 7** Open the folder (by double clicking) and verify there are four files in the folder.

- 8** Remember this location for running the bootloader process.

- 9** Proceed to:

Part 1A – if connecting through a KE2 Smart Gate (page 4).

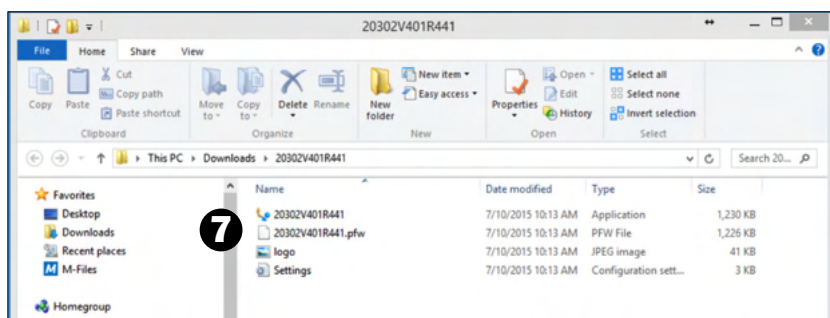
Part 1B – if connecting through a KE2-EM and KE2 Switch (page 6).

Part 1C – if connecting directly to the controller (page 8).

6

YES

NO



PART 1A – Using KE2 Smart Gate to connect to your KE2 Evap

- 1** Plug power cable into KE2 Smart Gate and electrical outlet.
- 2** Confirm that the **PWR** indicator is **ON**.
- 3** Connect a Cat5e network cable from your computer to an available Ethernet port (2-10) on the KE2 Smart Gate.

Note: DO NOT connect to the WAN Port (ETH1) on the KE2 Smart Gate.



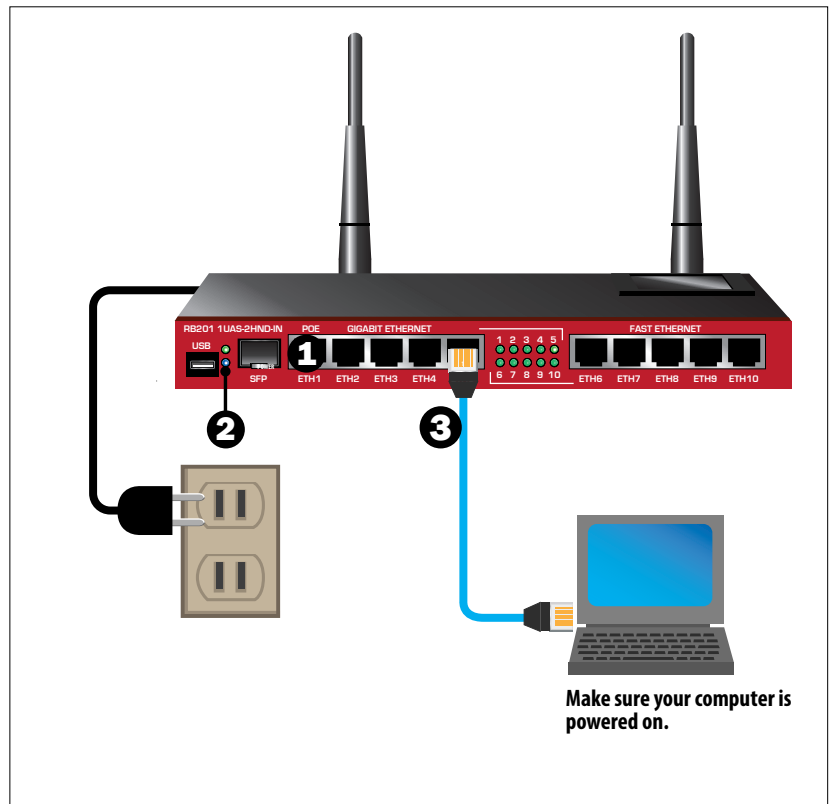
Note: DO NOT attempt to connect WIRELESSLY to the KE2 Smart Gate for bootloading, use wired Cat5e connection only.

- 4** Confirm that the network link light is active on your PC/laptop.

Note: plug your laptop into an outlet while updating to prevent an unwanted shutdown or sleep while the update is in process. Do not rely on battery power.

Turn OFF Wi-Fi on the PC/laptop. Only connect to the KE2 Smart Gate via an Ethernet connection for updates.

KE2 Therm recommends temporarily disabling any firewall during the bootload process.





KE2Evap Bootloader Guide

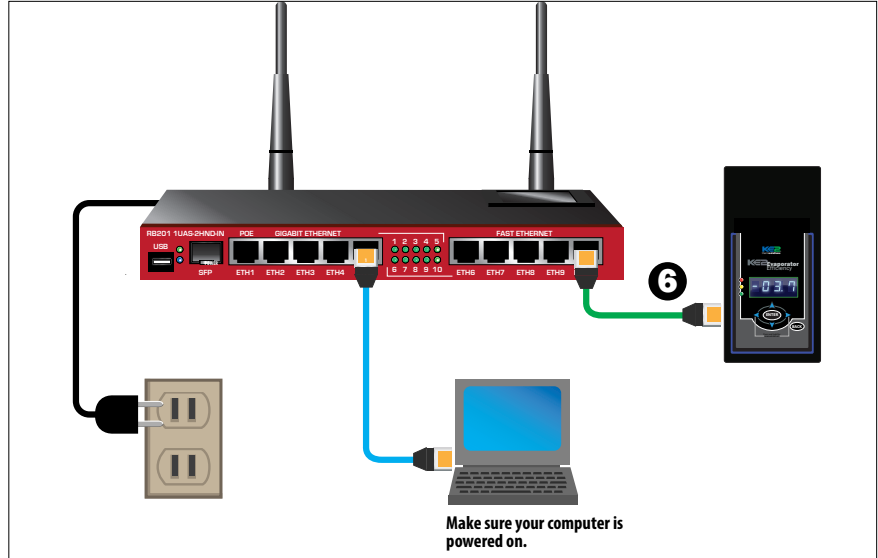
Updating Firmware to Version 5.00

- 5** Your PC/laptop will get an IP address from the KE2 Smart Gate.

- 6** Connect one end of an Ethernet cable to the controller, and the other end to an available Ethernet port (2-10) on the KE2 Smart Gate.

Note: DO NOT connect to the WAN Port (ETH1) on the KE2 Smart Gate.

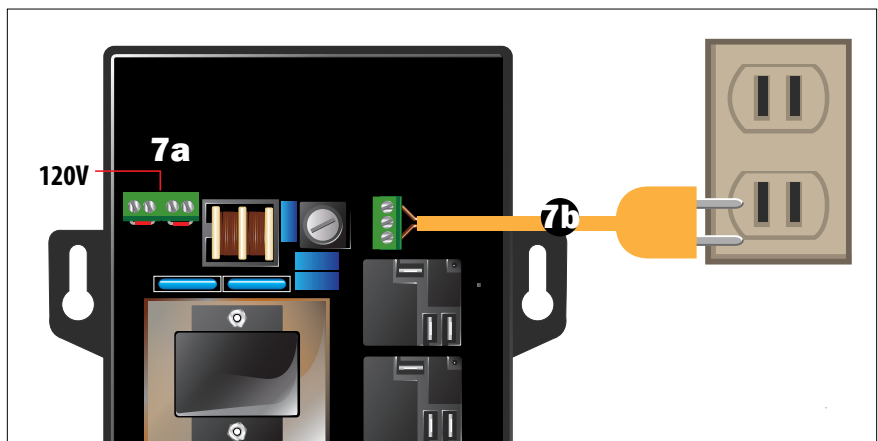
If the controller is already installed on a system, skip to step 8.



- 7** Connect power (120V or 208/240V) to the controller, if it is not already installed on a system.

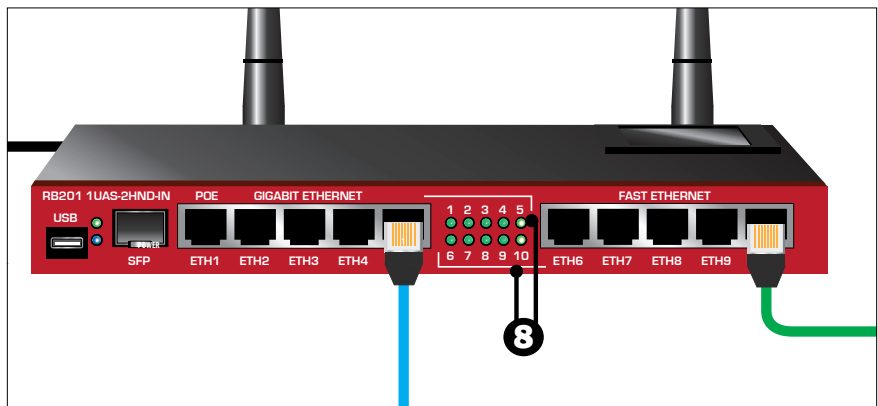
- 7a** Verify the voltage jumper is set for 120V if using a 120V power source (default is 208/240V).

- 7b** Attach the power connector to the controller, and the other end of the power cord into the wall socket.



- 8** Confirm the link lights that correspond to the ports used on the KE2 Smart Gate are blinking.

- 9** Go to Part 2.



PART 1B – USING KE2-EDGE MANAGER (KE2-EM) AND KE2 SWITCH

- 1** Plug power cable into KE2-EM, KE2 Switch and electrical outlet.
- 2** Confirm that the power indicators are **ON**.
- 3** Connect a Cat5e network cable from the KE2-EM LAN port to the KE2 Switch. Connect a Cat5e network cable from your computer to an available Ethernet port on the KE2 Switch.

Note: DO NOT connect to the WAN Port on the KE2-EM.



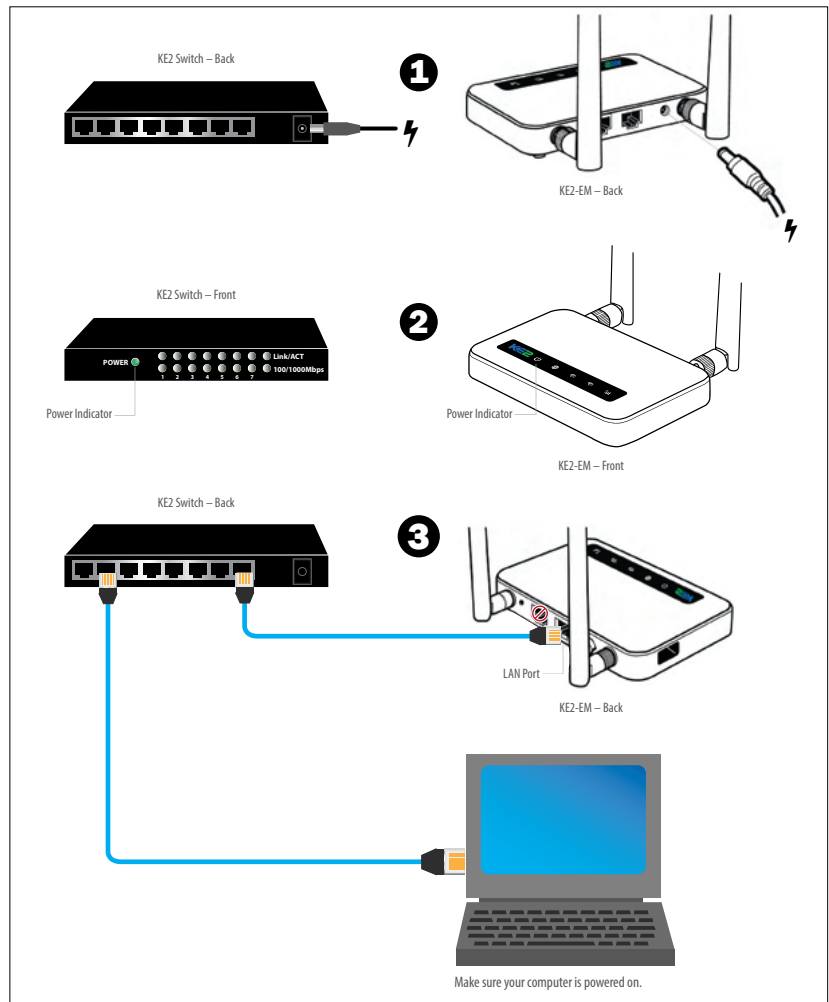
Note: DO NOT attempt to connect WIRELESSLY to the KE2-EM for bootloading, use wired Cat5e connection only.

- 4** Confirm that the network link light is active on your PC/laptop.

Note: plug your laptop into an outlet while updating to prevent an unwanted shut-down or sleep while the update is in process. Do not rely on battery power.

Turn OFF Wi-Fi on the PC/laptop. Only connect to the KE2 Switch via an Ethernet connection for updates.

KE2 Therm recommends temporarily disabling any firewall during the bootload process.





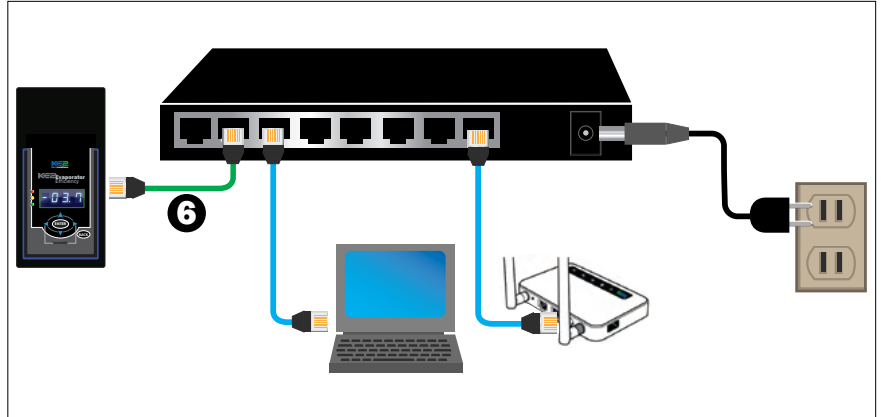
KE2Evap Bootloader Guide

Updating Firmware to Version 5.00

- 5** Your PC/laptop will get an IP address from the KE2-EM.

- 6** Connect one end of an Ethernet cable to the controller, and the other end to an available Ethernet port on the KE2 Switch.

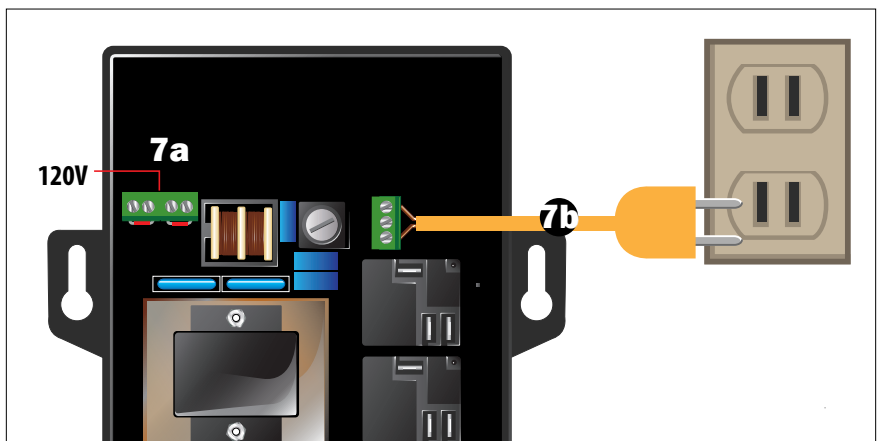
If the controller is already installed on a system, skip to step 8.



- 7** Connect power (120V or 208/240V) to the controller, if it is not already installed on a system.

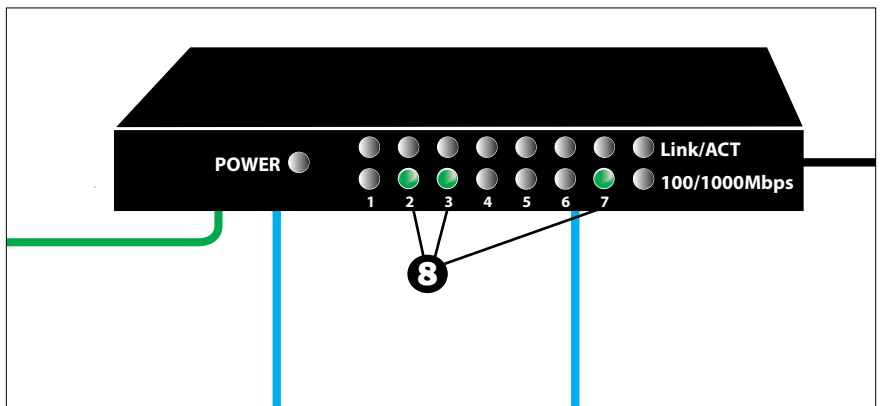
- 7a** Verify the voltage jumper is set for 120V if using a 120V power source (default is 208/240V).

- 7b** Attach the power connector to the controller, and the other end of the power cord into the wall socket.



- 8** Confirm the link lights that correspond to the ports used on the KE2 Switch are blinking.

- 9** Go to Part 2.



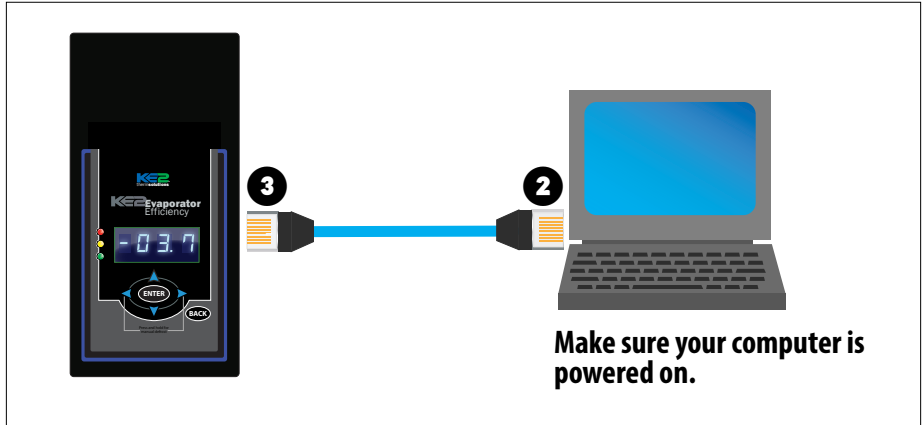
PART 1C – Connecting a computer directly to the KE2 Evap

- 1 To connect directly to a controller, first set your computer's IP address to a static address by following instructions in document Q.5.11: How to Direct Connect to Controller or by watching Video 124: Setting a Static IP Address.

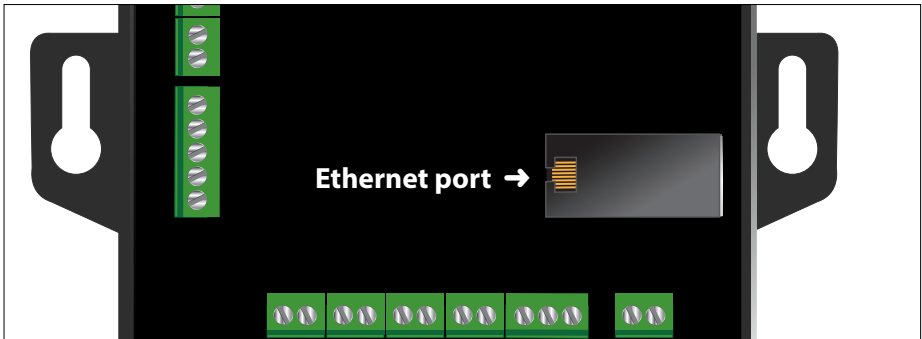


Video 124: Setting a Static IP Address
<https://youtu.be/NjRLXLGnbkU>

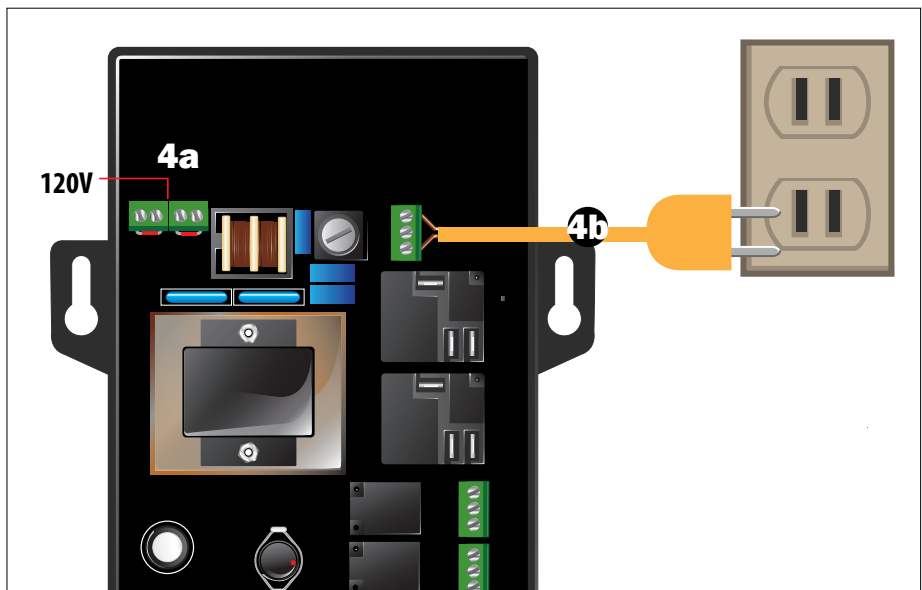
- 2 Connect an Ethernet cable to your computer.
- 3 Connect the other end of the Ethernet cable to the controller's Ethernet port on the back of the controller.



If the controller is already installed on a system, skip 4.



- 4 Connect power (120V or 208/240V) to the controller, if it is not already installed on a system.
 - 4a Verify the voltage jumper is set for 120V if using a 120V power source (default is 208/240V).
 - 4b Attach the power connector to the controller, and the other end of the power cord into the wall socket.





KE2Evap Bootloader Guide

Updating Firmware to Version 5.00

- 5** Confirm that the network link light is active on your PC/laptop.

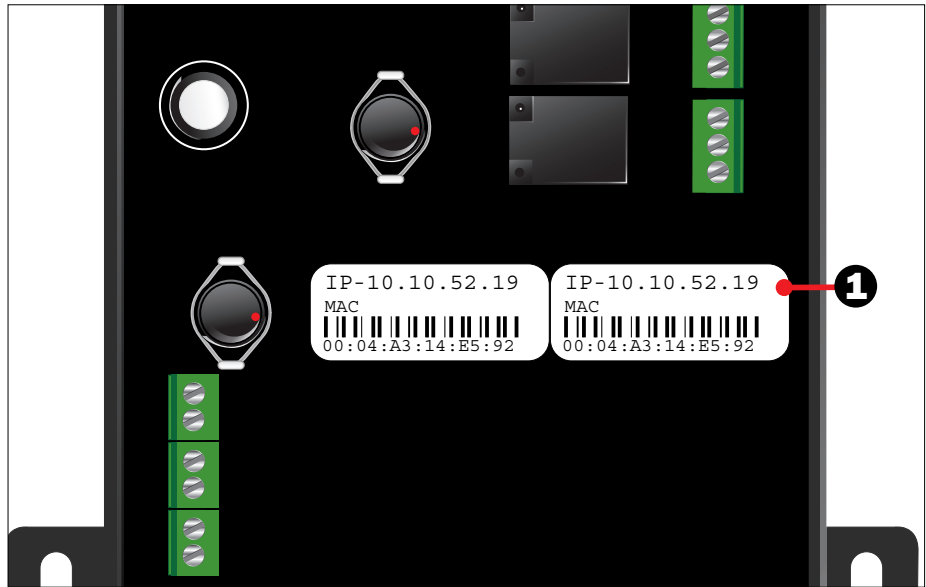
- 6** Go to Part 2.



PART 2 – Access Controller Webpage

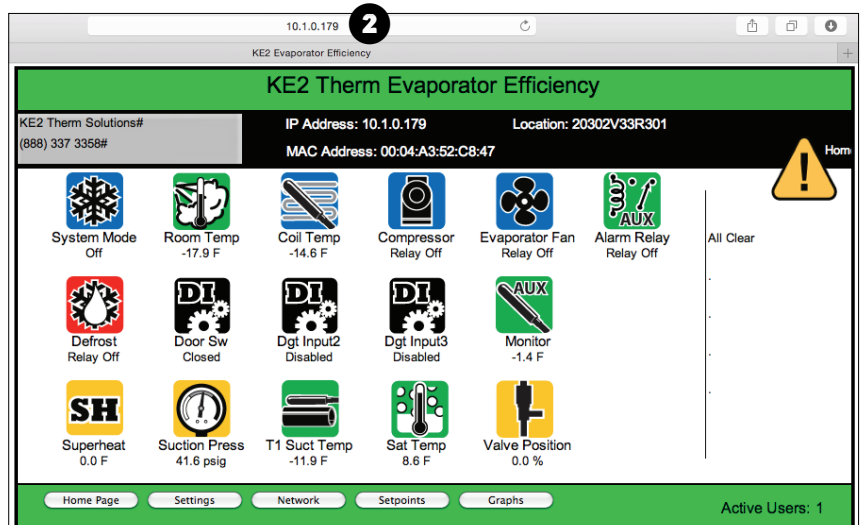
- 1 Record the preconfigured IP address on your controller.

IMPORTANT: If the controller's IP address has been changed by the end user, the new address must be used. The current IP address can be verified in the Variables menu on the front panel.



Instructions to update KE2 Evap Versions 3.00-4.10 to version 5.00

- 2 Open a web browser (e.g. Edge, Firefox, Chrome) and enter the KE2 Evap IP address in the address bar. The main page of the controller will come up on the screen.



- 3 Click on **Setpoints** to view the current system setpoints.





KE2Evap Bootloader Guide

Updating Firmware to Version 5.00

- 4 To quickly re-program the controller after bootloading the new firmware, collect a screenshot of the Setpoints page and the Settings page.

These screens can be easily captured by pressing the **ALT + PRTSC** key on the computer, and pasting this image into a MS Word document, or by taking a picture of the screens with a cellphone or other mobile device.

Do this for each screen you want to capture.

- 5 Click the **Settings** button.

- 6 Click **Login** to get to the Login screen.

- 7 Type in the User Name and Password.

Version 3.3 to 4.10

Default Password: ke2admin
Default User Name: ke2admin

Version 3.2 and Prior

Default Password is 2222

- 7a Press **Enter** or click the **Submit** button.

Version 3.2 and prior

Password



KE2Evap Bootloader Guide

Updating Firmware to Version 5.00

- 8 Note the current firmware revision number.
- 9 Click the **Bootloader** button, (Version 2.021 and older the button is labeled **Flash**).

KE2 Therm Evaporator Efficiency

KE2 Therm Solutions# (888) 337 3358# IP Address: 10.1.0.179 Location: 20302V33R301 MAC Address: 00:04:A3:52:C8:47 Settings Page

Alert Notifications

Email Server: smtp.gmail.com Advanced (Port 4) User Name: ke2therm Password: ***** Address for Alerts: rennickc@gmail.com Alerts Subject: KE2AlarmTest Test Email Submit

Location Settings

Business Name: KE2 Therm Solutions# Phone Number: (888) 337 3358# Location: 20302V33R301

Firmware

Bootloader 20302V3.3

Controller

Reset

Logs

Clear

Alarms

Clear

Web Page Log In Update

User Name: 8-13 characters Password: 8-13 characters

Log Key Activation

Current Key: BUYJ-KUCB-T3TD Time Remaining: 166 Days 7 Hrs Activation Key: Activate

Home Page Settings Network Setpoints Save Login

- 10 If a verification screen pops up, click **Yes**.

- 11 The controller will go to Bootloader Mode, and display **BTLM** on the display (on earlier firmware versions, the web page will display a red background and say controller is in bootloader mode).





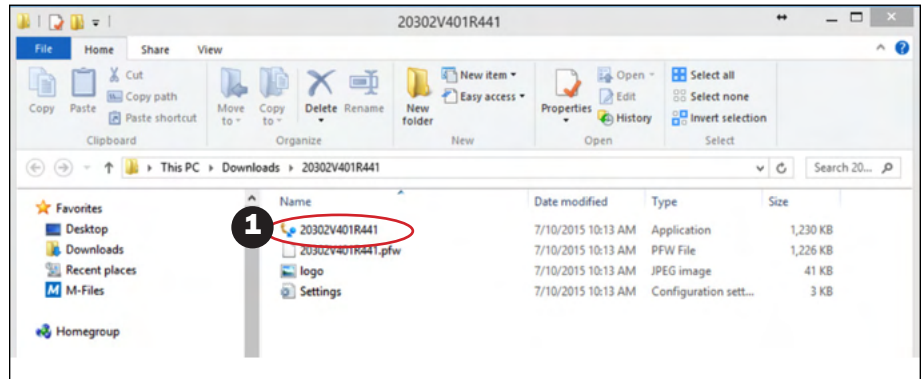
KE2Evap Bootloader Guide

Updating Firmware to Version 5.00

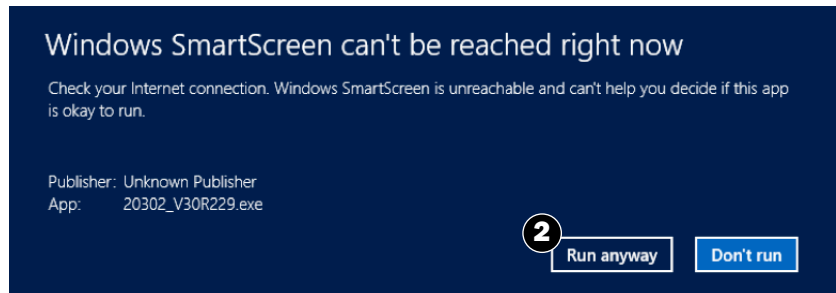
PART 3 – Launch & Execute the Bootloader Program

- 1 Double click the application file to launch the **bootloader program** from the folder you created in the preliminary steps.

Make sure you have the **four files necessary to complete the update.**



- 2 Windows 8, 10 & 11 - Click **Run anyway**.

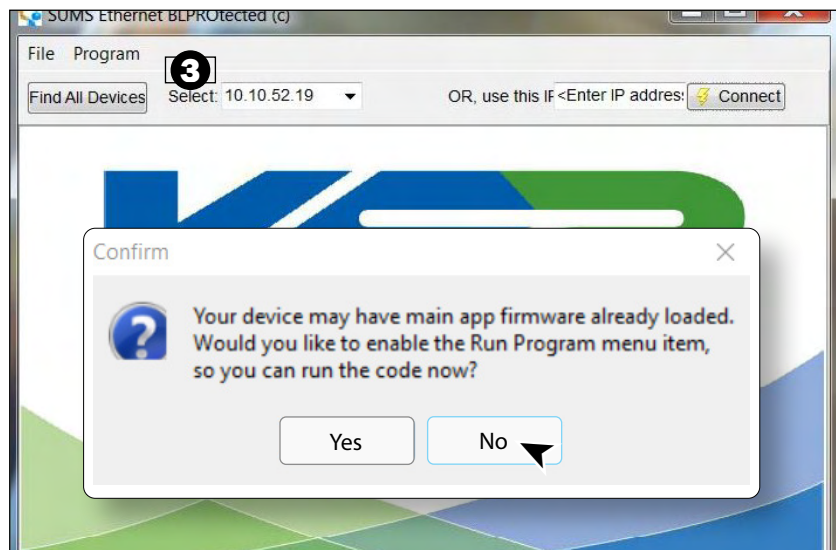


- 3 Confirm that the **bootloader program** has located the controller, at the controller's preconfigured IP address.

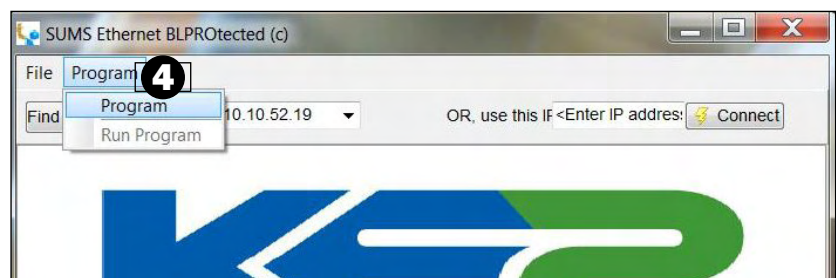
If you receive a message from your PC's firewall, make sure you allow it.

If you receive a message that no controllers are in bootloader mode, manually enter the IP address on the right-hand side and click "Connect".

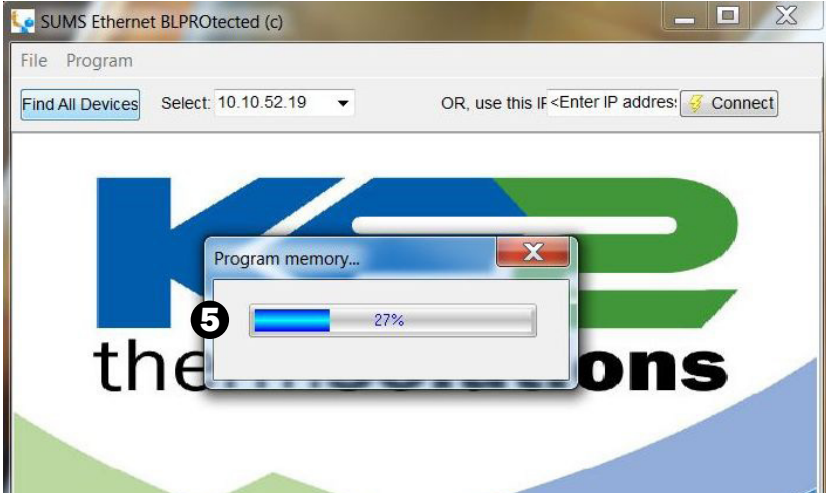
If asked whether to run the code now in a popup box, select **No**.



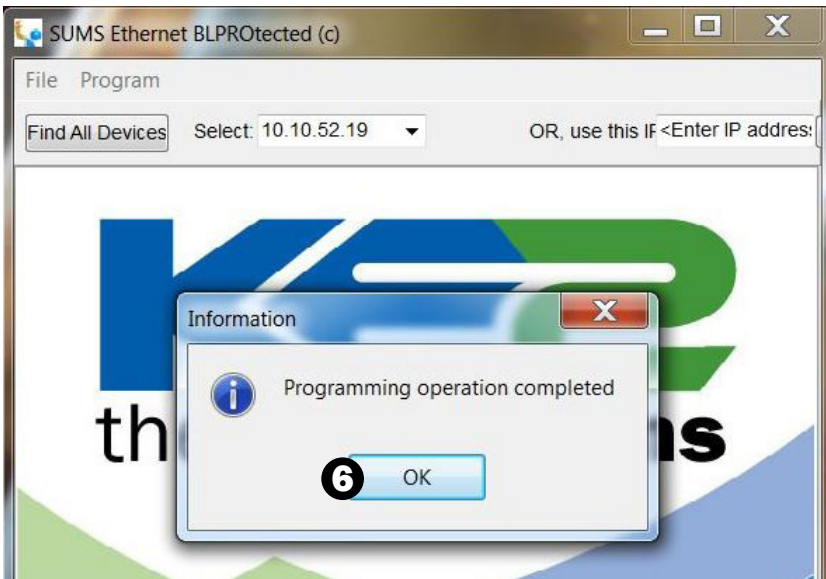
- 4 Select **PROGRAM/PROGRAM**.



- 5** Observe the programming process.



- 6** Once the programming process has completed, click **OK**.



- 7** You will now see another message telling you Congratulations! Click **OK** again.





KE2Evap Bootloader Guide

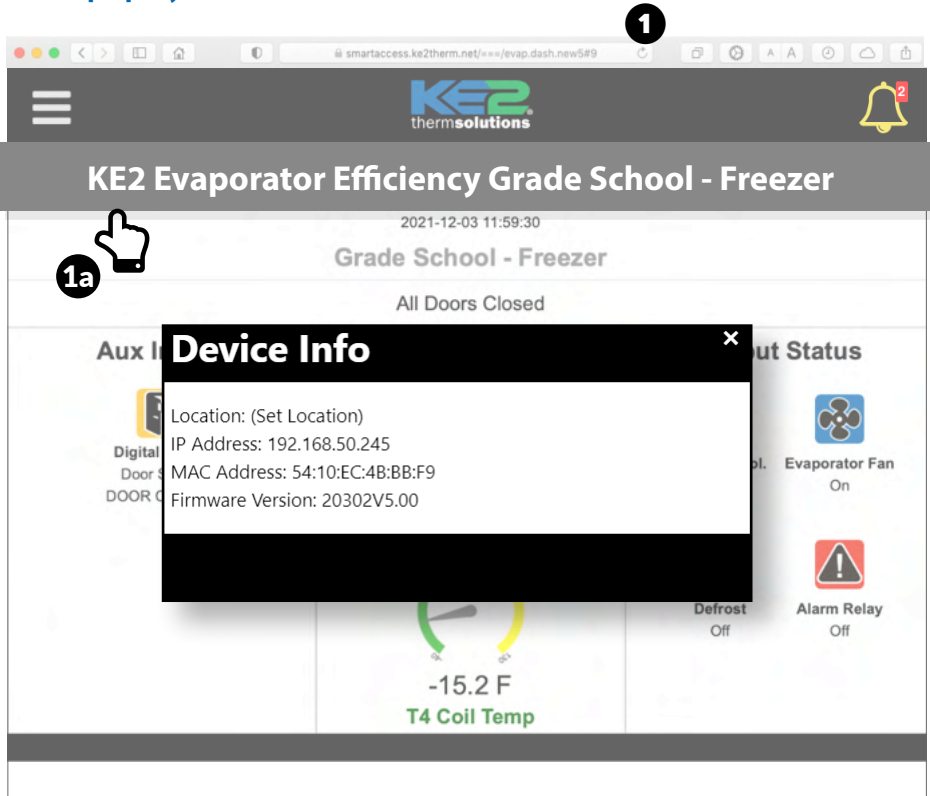
Updating Firmware to Version 5.00

PART 4 – Confirm the firmware update is installed properly

- 1 Refresh the web browser for the controller web page.

NOTE: Due to browser caching, it is sometimes necessary to start a new browser session, or use Incognito/Private mode to load the webpage correctly.

- 1a Click **KE2 Evaporator Efficiency** to open the "Device Info" window. Confirm Firmware Version is now 20302v5.00.



- 2 Using the screenshots collected from Part 2 Step 4, Login and change any values on the Setpoints page that were changed to defaults during the bootload process.

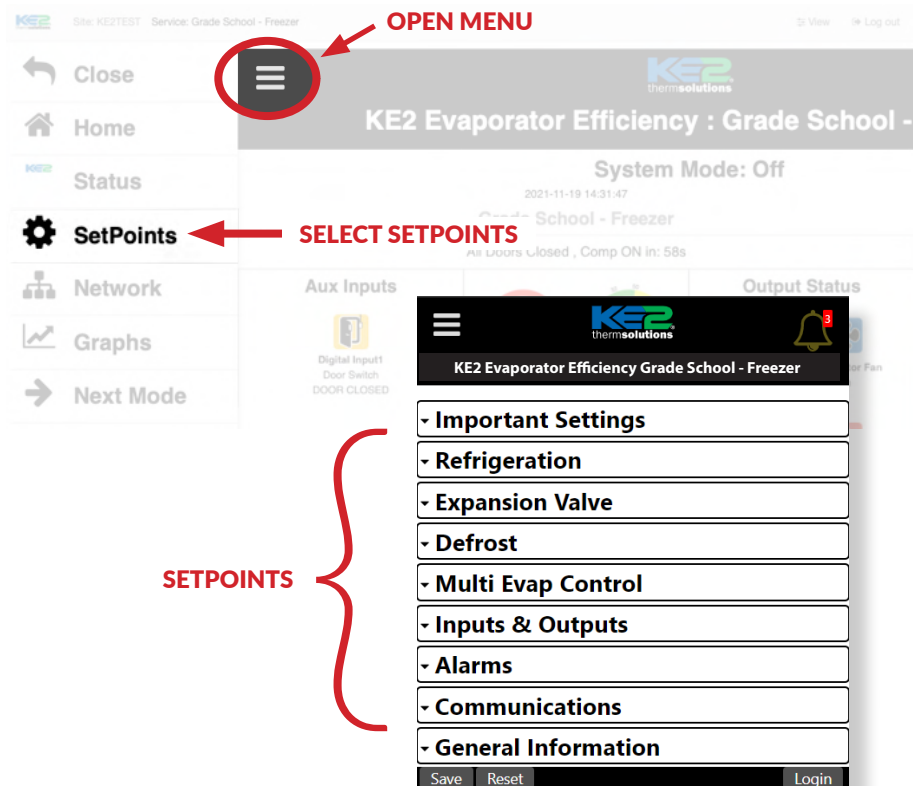
Note: the controller will be in Intro mode after bootloading, the same as if you installed it for the first time. If no setpoints need to be changed, click **Save** on the Setpoints page to accept default values, and allow the controller to begin operating.

Login to make changes, default credentials are as follows:

Username: ke2admin
Password: ke2admin

For security, the Password **MUST** be changed from default upon first login. Once Password is changed, login using "ke2admin" and the new Password you just created.

IMPORTANT: Due to security improvements in v5.00, your browser will likely display a privacy or security warning when first connecting to the controller. See next page.



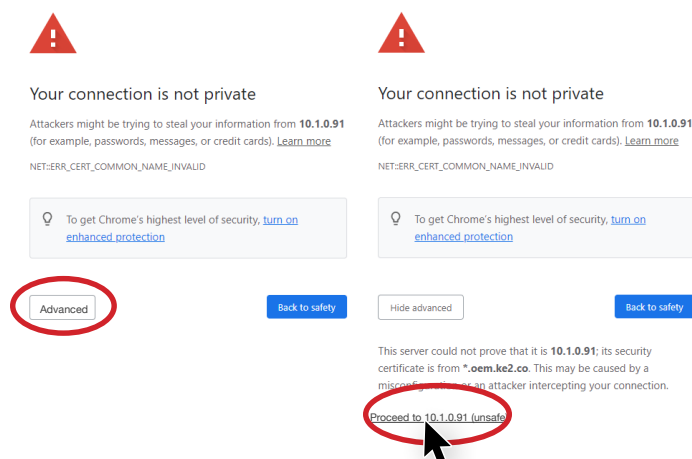


KE2Evap Bootloader Guide

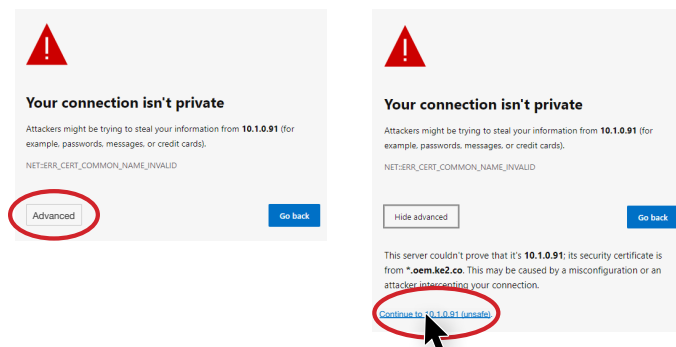
Updating Firmware to Version 5.00

When connecting to the controller via its IP address, a privacy or security warning will likely appear in the browser. If the IP address of the controller is correct, depending on the browser, click **“Advanced”** or **“Show Details”** then **“Proceed to...”** / **“Accept the Risk...”** / **“Continue to...”** / **“...visit this website”** to continue to the controller webpage. It is generally not advisable to click past this warning, however, proceeding past this warning when connecting to the controller is safe.

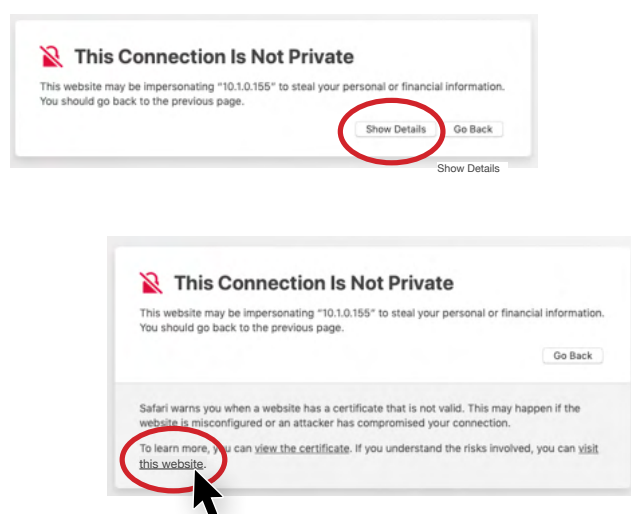
Chrome



Edge



Safari



Firefox

