



RCX-1 System Controller

THIS MANUAL CONTAINS IMPORTANT SAFETY INSTRUCTIONS



User manual

RCX-1 system controller rev 6.2.4





RCX-1 System Controller

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01. General Safety Precautions (1)



IMPORTANT SAFETY INSTRUCTIONS

01. Retain the safety and operating instructions provided with the product for future reference. Familiarize yourself with the instructions and follow them carefully to ensure safe and proper operation of the product.

02. Follow all operating and usage instructions as provided by CTgrow. This includes instructions related to installation, operation, maintenance, and storage of the product. Failure to follow these instructions may result in unsafe operation or damage to the equipment.

03. Observe all warnings on the product and in the operating instructions to reduce the risk of fire, bodily injury, electrical shock, and damage to the equipment. Warnings may include information on potential hazards, safe operation practices, and precautions to take. Pay close attention to any warning labels, symbols, or indicators on the product, and take appropriate action to mitigate any identified risks.

04. Unplug the product from the electrical outlet and take it to a CTgrow authorized service provider under the following conditions:

a. The power cord, on-board connectors, or the system's power inlets are damaged. Do not use the product if any of these components are damaged, as it may pose a risk of electrical shock or other hazards. Contact a CTgrow authorized service provider for inspection and repair.

b. Liquid has been spilled or an object has fallen into the product. If the product comes into contact with liquid or foreign objects, it should be immediately unplugged and taken to a CTgrow authorized service provider for inspection and repair. Do not attempt to power on the product or use it until it has been inspected and deemed safe by a qualified technician.

c. The product has been dropped, exposed to water, or is damaged in any way. Damaged products should not be used, and they should be inspected and repaired by a CTgrow authorized service provider. Using a damaged product may result in unsafe operation or further damage to the equipment.

d. The product does not operate normally when you follow the operating instructions. If the product does not function as expected, it should be taken to a CTgrow authorized service provider for diagnosis and repair. Do not attempt to troubleshoot or repair the product yourself, as it may result in further damage or pose a risk of injury.

05. Do not attempt to service any CTgrow products yourself, except as explained elsewhere in the CTgrow documentation. Opening or removing covers that are marked with warning symbols or labels may expose you to electric shock or other hazards. Service needed on components inside these compartments should be done by a CTgrow authorized service provider to ensure proper repair and avoid potential hazards. Any unauthorized servicing or modifications to the product may void the warranty and compromise the safety of the equipment.

06. Do not use the product on an unstable table, cart, stand, wall, or bracket. The product should be placed on a stable and level surface to prevent it from falling, which could cause serious bodily injury and damage to the product. Avoid placing the product in a location where it may be bumped, jostled, or knocked over during operation or maintenance.

07. Ensure proper ventilation for the product. The product is designed with slots and openings for ventilation, and these should never be blocked or covered. Proper ventilation is necessary to ensure reliable operation and prevent overheating. The product should not be placed in a built-in apparatus such as a bookcase or rack unless it is specifically designed for it and proper ventilation is provided as per the product instructions. Overheating of the product may result in malfunction, damage, or fire hazards.



RCX-1 System Controller

01. General Safety Precautions (2)



IMPORTANT SAFETY INSTRUCTIONS

08. Only use ground fault circuit interrupters (GFCI) on all outlets used to power CTgrow devices. CTgrow products are equipped with a three-wire electrical grounding-type plug that has been designed to provide an additional layer of safety. It is important to use outlets that are protected by ground fault circuit interrupters (GFCI) to reduce the risk of electrical shock. If you do not have GFCI outlets, consider using a portable GFCI adapter or have a qualified electrician install GFCI outlets in the area where the product will be used.

09. Use the product in a dry environment. Avoid using the product in wet or damp conditions, as it may pose a risk of electrical shock or damage to the equipment. If you need to clean the product, follow the instructions provided by CTgrow, and ensure that the product is completely dry before plugging it back in or powering it on.

10. Keep the product away from children and pets. CTgrow products may have small parts, cords, or components that can pose a choking hazard or risk of injury if swallowed or played with by children or pets. Keep the product out of reach of children and pets, and ensure that they do not play with or tamper with the equipment.

11. Do not overload electrical circuits. Ensure that the product is plugged into an outlet that can handle the electrical load of the product. Do not overload extension cords, power strips, or outlets with too many devices, as it may result in overheating, electrical hazards, or damage to the equipment.

12. Follow proper maintenance procedures. Regular maintenance, as recommended by CTgrow, is important to keep the product operating safely and efficiently. This may include cleaning, filter replacement, and other maintenance tasks. Always follow the maintenance instructions provided by CTgrow, and do not attempt to perform maintenance tasks that are not recommended or provided in the product documentation.

13. Use only recommended accessories and replacement parts. CTgrow products are designed to work with specific accessories and replacement parts that have been tested and approved for use with the equipment. Using unauthorized accessories or replacement parts may result in unsafe operation, damage to the equipment, and voiding of the warranty. Always use genuine CTgrow accessories and replacement parts to ensure safe and proper operation of the product.

14. Be aware of potential hazards associated with growing plants. If you are using CTgrow products for indoor gardening or plant cultivation, be aware of potential hazards associated with growing plants, such as electrical hazards, water hazards, use of fertilizers, and exposure to pesticides or other chemicals. Follow safe gardening practices and take appropriate precautions to protect yourself and others from potential hazards associated with plant cultivation.

15. Store the product properly. When not in use, store the product in a dry and cool place, away from direct sunlight, heat sources, and moisture. Avoid storing the product in areas with extreme temperatures, high humidity, or excessive dust, as it may affect the performance and lifespan of the equipment.

16. Familiarize yourself with emergency procedures. In case of an emergency, such as fire, electrical shock, or other hazards, know the location of emergency exits, fire extinguishers, and other safety devices in your vicinity. Familiarize yourself with emergency procedures, and follow them in case of an emergency. Contact emergency services for assistance, if needed.

17. Stay informed about product updates and recalls. CTgrow may release product updates, safety alerts, or recalls for its products. Stay informed about any updates or recalls related to the product you are using, and follow the instructions provided by CTgrow for any necessary actions, such as software updates or component replacements, to ensure continued safe and proper operation of the equipment.

By following these detailed safety precautions, you can help ensure safe and proper operation of CTgrow products, reduce the risk of accidents or damage to the equipment, and protect yourself and others from potential hazards associated with product use. Always refer to the product documentation and follow the instructions provided by CTgrow.



RCX-1 System Controller

02. Introduction to the RCX-1 controller

The RCX-1 by CTgrow is the ultimate solution designed specifically for professional growers who demand precise control and automation for their grow-rooms or greenhouses. This advanced controller offers unparalleled flexibility, allowing growers to effortlessly manage their operations remotely from anywhere in the world, whether it's a small grow-room setup or a massive greenhouse operation.

One of the standout features of the RCX-1 is its compatibility with CTgrow's comprehensive range of modular external power-switch and control units. This means growers can easily switch and control heavy-duty devices, such as multiple groups of grow lights, commercial-grade air-conditioning units, giant pumps, window actuators, and more. With the ability to control up to 24 different devices in 4 different time zones or rooms*, the RCX-1 offers unmatched versatility and adaptability to suit any size and complexity of grow operation.



Ultimate control, Better yields. WWW.CTGROW.COM

The RCX-1 controller by CTgrow is designed with convenience and versatility in mind, featuring built-in WiFi and Ethernet connectivity options. It comes equipped with a WiFi client and WiFi Access-Point module, as well as a waterproof Ethernet port for UTP/LAN networks, allowing growers to easily control the RCX-1 system from various devices such as tablets, laptops, smartphones, or PCs, as long as they have LAN/WiFi capabilities and a network browser.

Moreover, the RCX-1 is compatible with different power grids found in various countries worldwide, with up to 7 different types of electrical outlets/power cables available for order, ranging from 115V for the USA and Canada to 230V for Europe and the UK, making it suitable for a wide range of global applications. (*Please consult your dealer for the appropriate power-cable for your country)

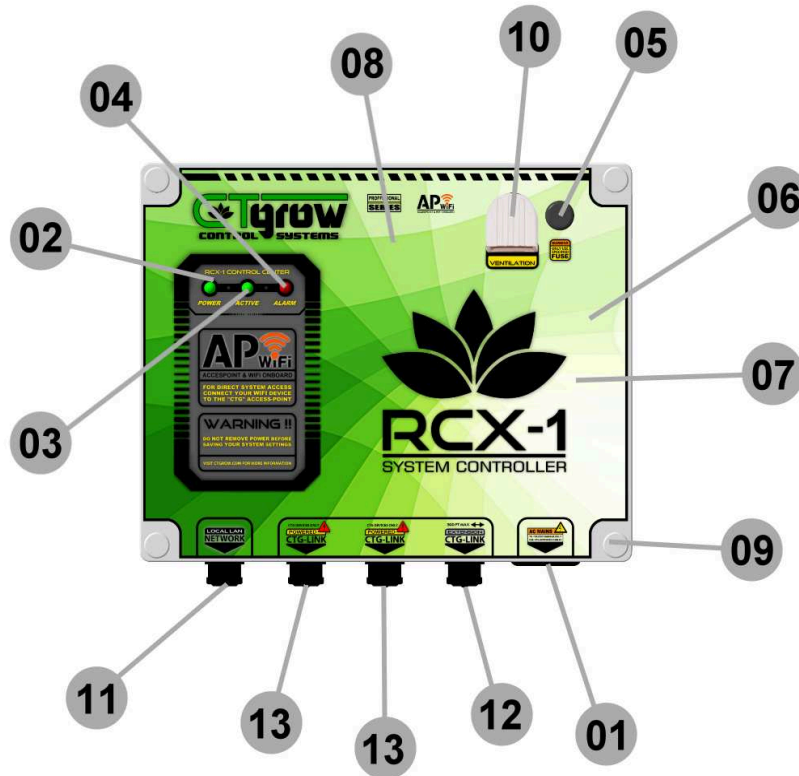
One of the key advantages of the RCX-1 control system is its ability to function autonomously without the need for external internet or network connections. Using high-tech industrial measurement and switching techniques combined with CTgrow's specially designed hardware and software, the RCX-1 offers unparalleled control and reliability in the current climate controller market.

What sets the RCX-1 apart is its modular design and the wide range of specialized sensor units offered by CTgrow. These sensor units enable growers to monitor crucial parameters such as CO2 ppm, pH and EC values, humidity levels, temperature variations, and other specialized values like VPD, DO, ORP, and Lux light levels. This comprehensive monitoring capability empowers growers to make data-driven decisions and optimize their grow environment for maximum yield and quality.



RCX-1 System Controller

03. The RCX-1 System Controller explained



- 01: Power-cable inlet port (universal C-14 standard)
- 02: Power ON LED light (when lit the system has power)
- 03: Active LED light (when ON, system is ready & OK)
- 04: Alarm LED light (for all kind of alarm activated warnings)
- 05: System fuse holder (only for the controller)
- 06: On-board WiFi Access-point (for direct system access)
- 07: On-board WiFi Client (to connect to local WiFi networks)
- 08: Super-fast Computer controller with on-board clock
- 09: Ip44 proof housing made of extremely durable materials
- 10: Air ventilation ports (do not cover, keep open)
- 11: LAN (local area network) port (for existing utp networks)
- 12: Extension CTG-LINK port (for CTgrow extension units)
- 13: Powered CTG-LINK ports (2x) (for 2 extra CTgrow units)



RCX-1 System Controller

04. System installation procedure

IMPORTANT INSTALLATION NOTICE !! DO NOT CONNECT ANY EXTERNAL UNITS UNTIL THIS INSTALLATION PROCEDURE IS COMPLETED.

1. Wall mount the RCX-1 controller

The RCX-1 controller is equipped with four mounting tabs. Please use the mounting tabs to securely install the RCX-1 controller in your preferred location (see Figure 4.1.1-1/4). It is important to choose a safe and sturdy location that is in close proximity to a Ground-protected mains power outlet.

When selecting a location, also keep in mind the proximity to other CTgrow units, you plan to install. If the distance is far, you may need CTG-Link extension cables to connect to your external CTgrow units.

The vent port is essential for cooling the controller and should not be blocked. (refer to Figure 4.1.1-5).

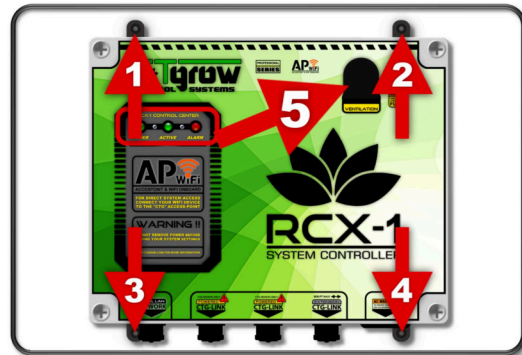


Figure 4.1.1

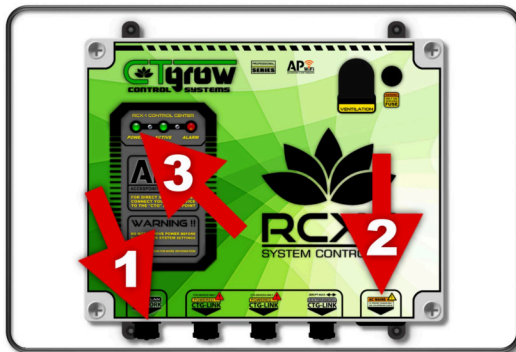


Figure 4.1.2

2. Connect the LAN/Ethernet cable

(Optional) You have the option to connect a local Ethernet LAN cable (RJ45) to the [LOCAL LAN NETWORK] port on your RCX-1 controller for a wired LAN/Internet connection (refer to Figure 4.1.1-1).

3. Connect the Power-cable

Plug the mains power connector into the power inlet located on the bottom-right side of the controller (See Figure 4.1.1-2). Then, plug the system's mains power plug into a GFCI protected power outlet. Once the RCX-1 receives mains power, the green power LED will light up. (refer to Figure 4.1.2-3).

4. Initializing the controller

After about a minute the red alarm LED will faintly turn on to indicate that the system is initializing. (see Figure 4.1.3-3) This (system boot) process typically takes up to 2 minutes.

After initialization, you may observe that all three LED's on the RCX-1 controller start to blink rapidly for 10 seconds. This indicates that the system has completed its initialization process and is almost ready for use.

Wait for the "ACTIVE" LED light (see Figure 4.1.3-2) to turn green. The ACTIVE light indicates that the system is ready to be used and is functioning correctly.

Wait until the "ACTIVE" LED light turns on before attempting to connect to the system.

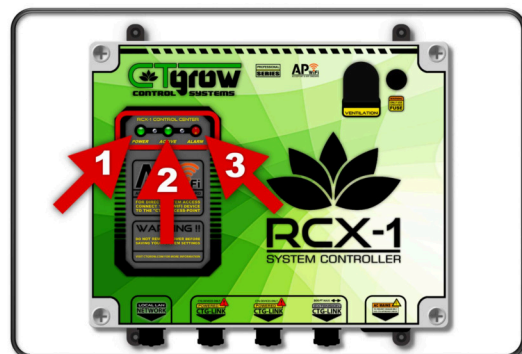


Figure 4.1.3



RCX-1 System Controller

05. Communicating with the RCX-1 controller (part 1)

IMPORTANT INSTALLATION NOTICE !! DO NOT CONNECT ANY EXTERNAL UNITS UNTIL THIS INSTALLATION PROCEDURE IS COMPLETED !!

1. Direct communication with the RCX-1

To establish direct communication with the RCX-1 access-point, you will need a WiFi-enabled device with a web browser, such as a tablet, laptop, smartphone, or PC (refer to Figure 5.1.1-2).

When the green "ACTIVE" LED on the RCX-1 controller's front-panel is illuminated, you can start with connecting your (mobile) device to the RCX-1 access-point.

To ensure successful connection to the RCX-1 access point, make sure that your device's WiFi is ON (see Figure 5.1.1-1) and disable any form of Smart Network Switching.

For detailed instructions on how to disable "Smart Network Switching" on your specific device, please refer to the manual or documentation provided by the manufacturer. The steps may vary depending on the make and model of your device.

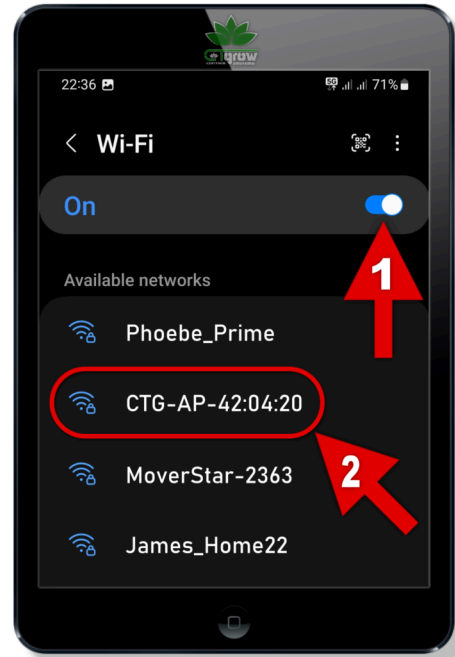


Figure 5.1.1

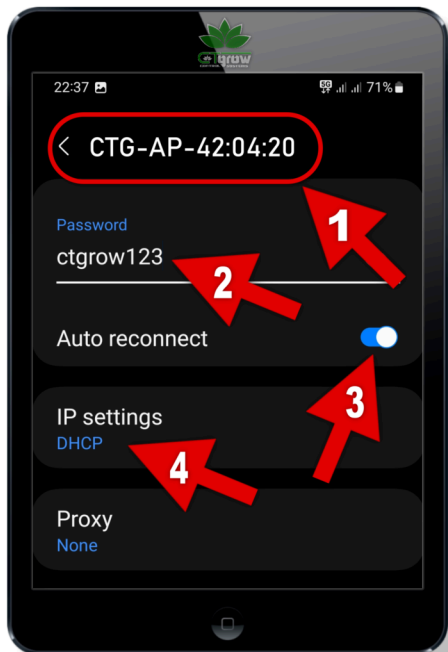


Figure 5.1.2

2. Connecting to the RCX-1 by Access-point

Access the WiFi settings menu on your tablet, smartphone, or PC (see Figure 5.1.1) and search for the **CTG-AP-XX:XX:XX** WiFi network name of the controller in your WiFi network list (see Figure 5.1.1-2).

Note that XX can be any number between 0 and 99. If you cant find the **CTG-AP-XX:XX:XX** in your WiFi list, you may need to refresh your WiFi list or scan for new WiFi networks (see Figure 5.1.1-2).

Select the **CTG-AP-XX:XX:XX** name in your WiFi network list to make a connection with the RCX-1. (see Figure 5.1.1-2) The RCX-1 uses a secure WPA2-protected access point. When asked for a WiFi password, enter: **ctgrow123** (see Figure 5.1.2-2)

To establish direct communication with the RCX-1, ensure that your IP settings are configured to DHCP (Dynamic Host Configuration Protocol), which allows to obtain an IP address automatically from the RCX-1 controller (refer to Figure 5.1.2-4).



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05. Communicating with the RCX-1 controller (part 2)

IMPORTANT INSTALLATION NOTICE !! DO NOT CONNECT ANY EXTERNAL UNITS UNTIL THIS INSTALLATION PROCEDURE IS COMPLETED !!

3. save your access-point network settings

After successfully connecting to the RCX-1 access point and entering the correct password, you may receive a warning about internet connectivity not being available (See Figure 5.1.3-1). This is expected, as the RCX-1 access point does not require internet connectivity for its operation. You can safely ignore this warning and proceed with the setup.

Next, make sure to select the "Always Connect" or similar option, depending on the specific configuration of your RCX-1 controller, to save your settings and ensure consistent connectivity and configuration (See Figure 5.1.3-2) This will ensure that your settings are applied every time you log in to the RCX-1 access point, making it convenient and efficient for future logins.

Once you have selected the appropriate option, you can now close down your WiFi settings menu and open up your preferred web browser. We recommend using Google Chrome or any other web browser of your choice. This will allow you to access the RCX-1 controller's web interface and configure it according to your needs.

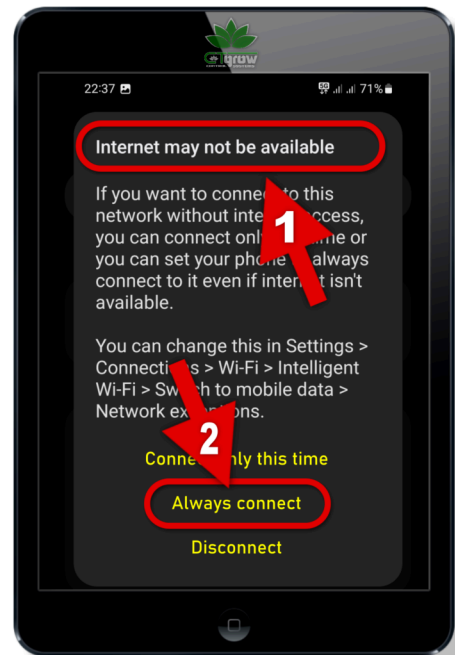


Figure 5.1.3

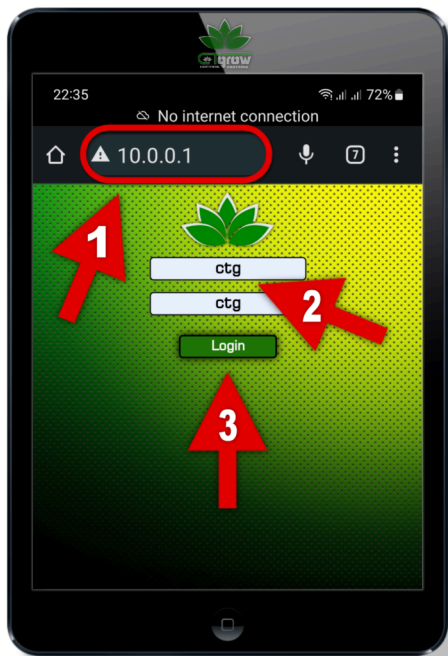


Figure 5.1.4

4. Connect to the CTgrow controller dashboard

Open your preferred web-browser and go to the address-bar on top. In the address bar of your web browser, enter the web address: **10.0.0.1** and press enter (See Figure 5.1.4-1). This will take you to the login page of the RCX-1 master controller (See Figure 5.1.4-1), where you will be prompted to enter the user login name and user password. (See Figure 5.1.4-2)

Enter the **username: ctg** and **password: ctg** in the provided fields and click on the login button to proceed. (See Figure 5.1.4-3). It's worth mentioning that some devices may require you to enter the user name and password twice for security reasons.

Once you have entered the correct user name and password on the RCX-1 controller's login page, the system will start to load the RCX-1 controller's dashboard and configuration options. This will provide you with access to the controller's dashboard interface, allowing you to directly communicate with the controller and program its various settings.



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06. Introduction to the RCX-1 dashboard (part 1)

1. The RCX-1 dashboard interface

The RCX-1 dashboard is a web-based interface that provides users with a complete overview and control of the RCX-1 controller. It serves as a central hub for monitoring, configuring, and controlling all connected CTgrow external units, allowing users to efficiently manage and optimize their production processes.

The controller's dashboard offers real-time data monitoring, configuration options, and remote access and control capabilities, allowing users to monitor and control their production processes from anywhere, anytime. Through the RCX-1 dashboard, users can access detailed information about their production processes, make changes to settings, and receive real-time notifications and alerts.

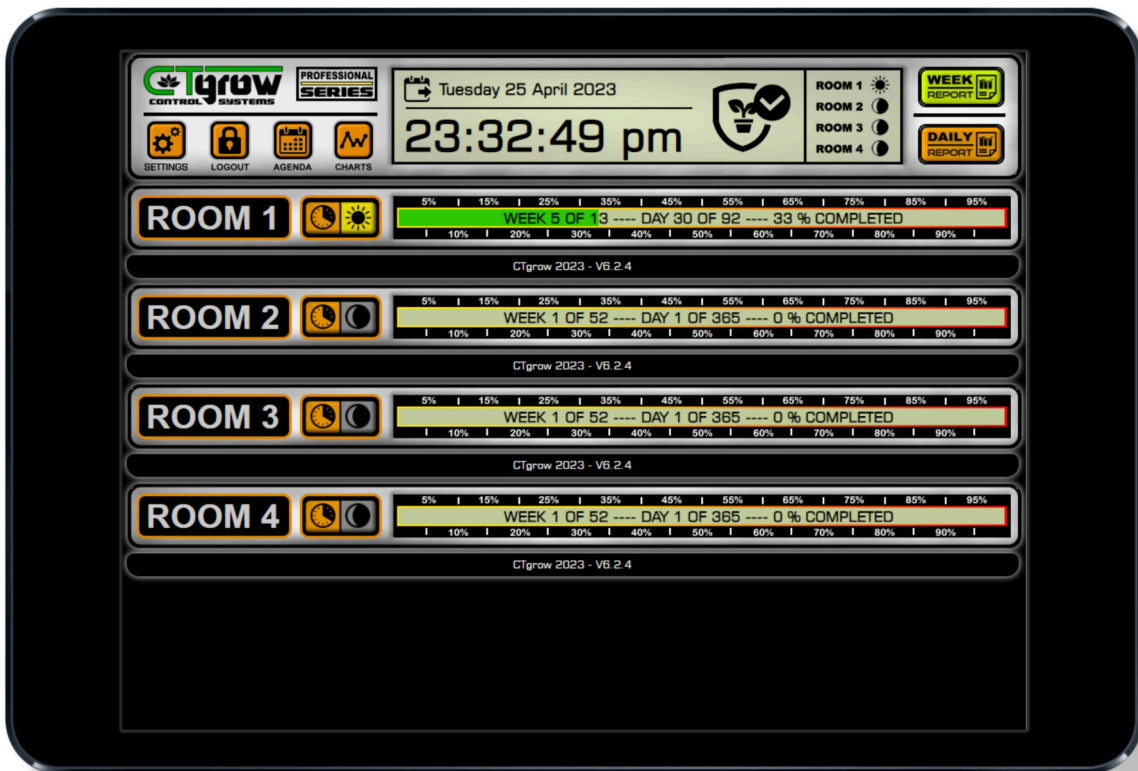


Figure 6.1.1

The remote access and control feature provides flexibility and convenience, enabling users to manage their production processes even when they are not physically present on-site. The intuitive interface and user-friendly design of the RCX-1 dashboard make it easy for users to interact with the controller and maximize their production efficiency. Overall, the RCX-1 dashboard provides users with a comprehensive overview and full control of the RCX-1 controller, allowing them to efficiently monitor, configure, and optimize their production processes.

See the next page for more information.



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06. Introduction to the RCX-1 dashboard (part 2)

2. The RCX-1 main dashboard functions

The RCX-1 dashboard offers a wide array of functions that we will explore in more detail. Let's start with the [CTgrow] logo button (refer to Figure 6.1.2-1). By pressing on the CTgrow logo button, you directly return to the dashboard from any menu.

The [settings] menu button, (see Figure 6.1.2-2) provides access to all the system settings, it contains all the setup functions for the RCX-1 controller and any connected unit. All the functions related to the settings menu will be discussed in various pages in this manual.

The [logout] button (see Figure 6.1.2-3) enables you to log out of the dashboard, returning you to the controller's login screen. The [Agenda] button opens your personal agenda for notes and task tracking. (see Figure 6.1.2-4)

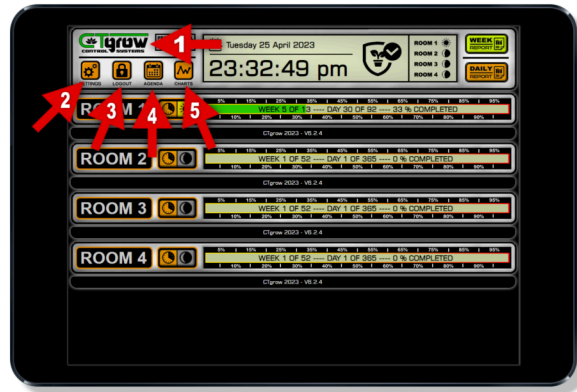


Figure 6.1.2

The [charts] button (refer to Figure 6.1.2-5) allows you to access the chart menu, where you can view all sensor data details for each unit individually. This provides a more in-depth analysis of the system's performance.

The controller's clock and date, (see Figure 6.1.3-6) are integral components of the RCX-1 dashboard as the entire system relies on this master clock. Always Make sure the date and time are correctly.

The system icon shows if all parameters are within their limits and shows a blinking alarm icon when something is wrong. (see Figure 6.1.3-7). The "room status" (see Figure 6.1.3-8) displays the current day and night state of all four rooms/zones, And the Report buttons open up the daily and weekly stored reports. (see Figure 6.1.3-9)

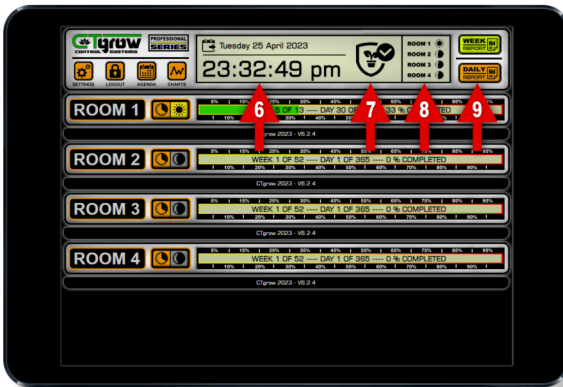


Figure 6.1.3

2. The RCX-1 multi room/zone status bar

The room/zone status bar displays the day and night state and current cycle state of each corresponding room. (See Figure 6.1.4-10) The [schedule] menu button (See Figure 6.1.4-11) shows the current day and night state and also functions as a button to access the room's schedule settings menu.

The cycle status of a programmed room/zone is displayed on the corresponding room's cycle status bar. This status bar provides useful information such as the current week of the cycle (see Figure 6.1.4-12), the number of days completed in the cycle versus the number of days remaining, (see Figure 6.1.4-13) and it also display's the percentage of the cycle that has been completed. (see Figure 6.1.4-14)

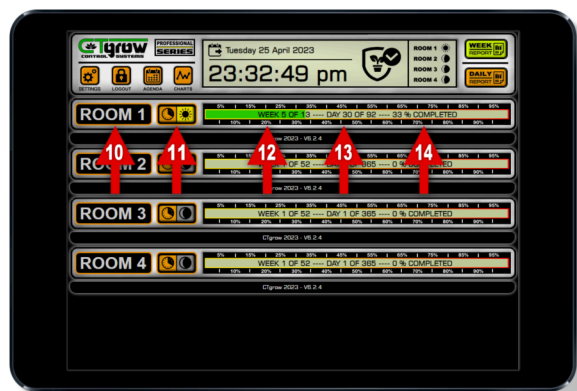


Figure 6.1.4



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07. Setting the system time and date

01. Opening the controller's time menu

From the dashboard of the controller, you can access the systems general settings menu by clicking on the [SETTINGS MENU] button located on the top left of the control bar. (refer to Figure 7.1.1)

This will open up a sub-menu where you can select the [SYSTEM MENU] button to access the system settings menu (refer to Figure 7.1.1).

Within the system setup menu, you will find the [time setup] button, which you can click on to enter the time setup menu. (see Figure 7.1.1-2)

From within the time setup menu, you can configure the system's time settings, such as setting the system clock, and the current date. (see Figure 7.1.2)

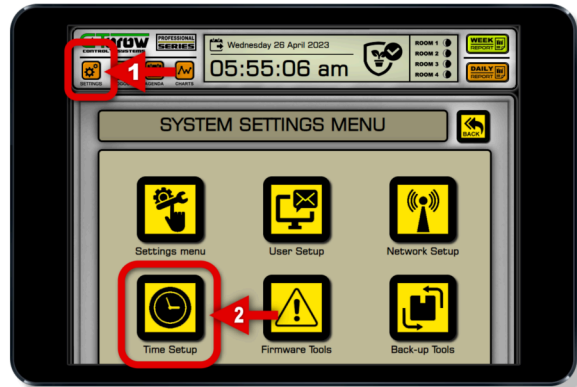


Figure 7.1.1

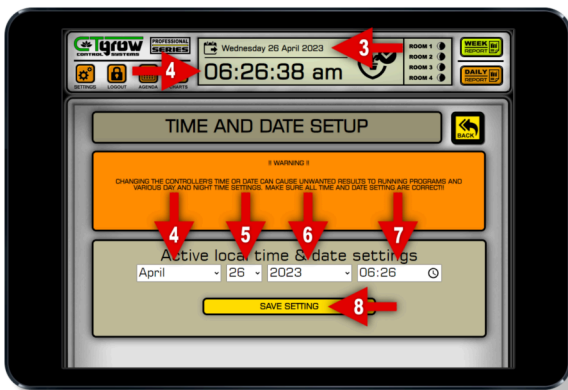


Figure 7.1.2

02. Setting the system date and time

From within the time and date setup menu, you have the option to modify the system's date and time settings (refer to Figure 7.1.2).

It is important to always begin by checking the currently set system date (see Figure 7.1.2-3) and system time (see Figure 7.1.2-3). This will ensure that the date and time are accurately set in the controller.

If you need to change the date, you can enter the current month (see Figure 7.1.2-4) and enter the current day (see Figure 7.1.2-5) and year (see Figure 7.1.2-6). and press the save button to store the date in the controller (see Figure 7.1.2-8).

To change the system time, you can enter the current 24-hr time (see Figure 7.1.2-7) and press the save button to store the time in the controller (see Figure 7.1.2-8).

Note: After making adjustments to the system's time or date, it is recommended to verify the time settings to ensure accurate operation of the system controller. Additionally, double-check your room/zone times to prevent any unintended time changes that may impact your scheduling. (refer to Figure 7.1.3-9/10).

If the controller detects a date or time that differs by more than an hour from the current time, it may automatically restart itself as a security measure !!

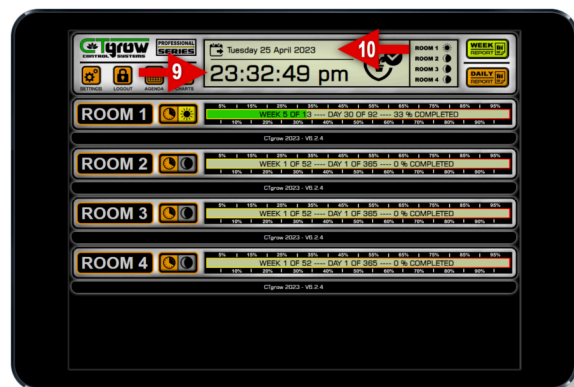


Figure 7.1.3



RCX-1 System Controller

08. Changing the RCX-1 user settings

01. Opening the user settings menu

From the dashboard of the controller, you can access the systems general settings menu by clicking on the [SETTINGS MENU] button located on the top left of the control bar. (refer to Figure 8.1.1-1)

This will open up a sub-menu where you can select the [SYSTEM MENU] button to access the system settings menu. From within the system menu, you will find the [User setup] button, which you can click on to enter the user setup menu. (see Figure 8.1.1-2)

From within the user setup menu, you can configure the system's user settings, such as your new username and change your controllers password. (see Figure 8.1.2)

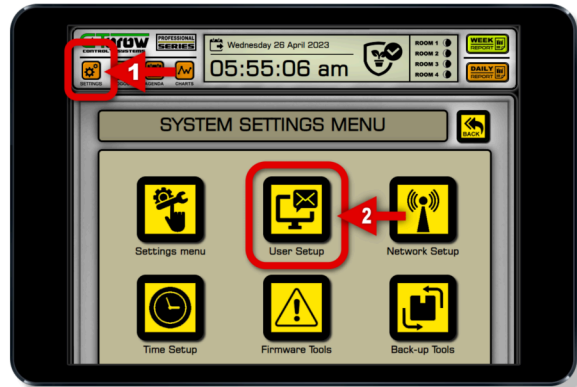


Figure 8.1.1

02. Changing the user settings

Note: Please exercise extreme caution when changing your username and/or password, as it may result in permanent lockout from your controller. To avoid losing access, always take a photo of your settings or write them down in a secure place.

From the USER SETTINGS menu (refer to Figure 8.1.2), you can set up your personal data to protect your controller from unauthorized access. You can create a new username (see Figure 8.1.2-1) and password (refer to Figure 8.1.2-2), and save your settings by pressing the [save button].

Additionally, if you wish to receive warnings and alarms from your controller via email, you have the option to set up your email account (refer to Figure 8.1.2-4/6). Please note that you need an internet connection via LAN or WIFI for the email settings to work. When finished, press the [save email settings] button before leaving this page.

It is recommended to use Gmail as the email client due to its easy integration with the controller's software. When setting up Gmail, you always need to use Google's special "app passwords" and not your personal Gmail password. You can Google how to use Google's "app passwords" and create a special password for your RCX-1 controller.

The RCX-1 will send an email message with your new username & password to your selected email account (this can take a couple of minutes depending on your email provider). **TIP! Wait for the email to arrive to assure the settings are working!**



Figure 8.1.2



RCX-1 System Controller

09. LAN / WiFi / Access-Point setup (part 1)

01. Opening the network setup menu

From the dashboard of the controller, you can access the systems general settings menu by clicking on the [SETTINGS MENU] button located on the top left of the control bar. (refer to Figure 9.1.1-1)

This will open up a sub-menu where you can select the [SYSTEM MENU] button to access the system settings menu (refer to Figure 9.1.1). Within the system setup menu, you find the [network setup] button, which you can click on to enter the network setup menu. (see Figure 9.1.1-2)

From within the network setup menu, you can setup all the controller's network settings, such as connecting the RCX-1 to your local LAN or WiFi. (see Figure 9.1.2)

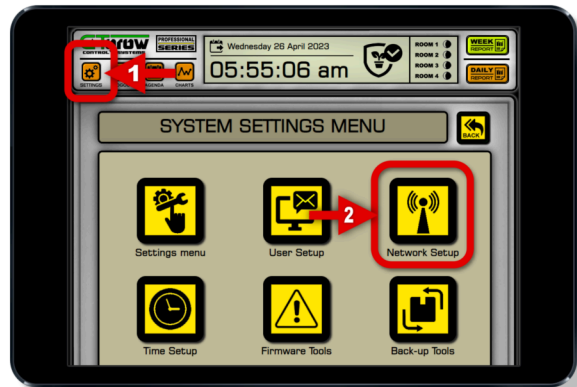


Figure 9.1.1

02. LAN SETUP (with UTP cable connected!)

When the RCX-1 controller is connected to your local LAN network, accessing it through a web browser is a simple process. You can do so by typing its local LAN IP address into the address bar of your web browser, which can be found at the bottom of the network setup menu page. (see Figure 9.1.2-2)

If the LAN IP address is not visible, make sure it's properly connected and reboot the controller. Keep in mind that the device accessing the controller must be connected to the same local LAN network. It is important to note that a LAN connection is required to use the remote access function. (see Figure 9.1.2-2)

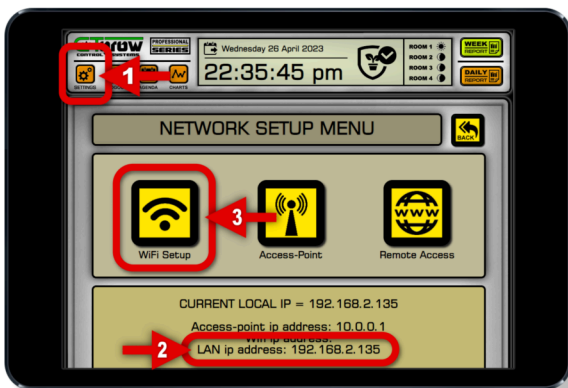


Figure 9.1.2

03. WIFI SETUP (local WiFi network) part 1

To connect the Controller to your local WiFi network, press the [WIFI SETUP] button (see Figure 9.1.2-3) to enter the WiFi client menu. (see Figure 9.1.3)

Within the WiFi client settings menu, enter your local WiFi name and password (see Figure 9.1.3-1/2) and press [SAVE] (see Figure 9.1.3-3) Next click the WiFi adapter ON/OFF (see Figure 9.1.3-4) and press on the yellow [SAVE] button to save.

To obtain the controllers new WiFi access address please wait for about 1 minutes and then press the [CHECK] button. The controller will present its new (WiFi) IP address in the menu. (see Figure 9.1.3-5)

See the next page for more WiFi settings!

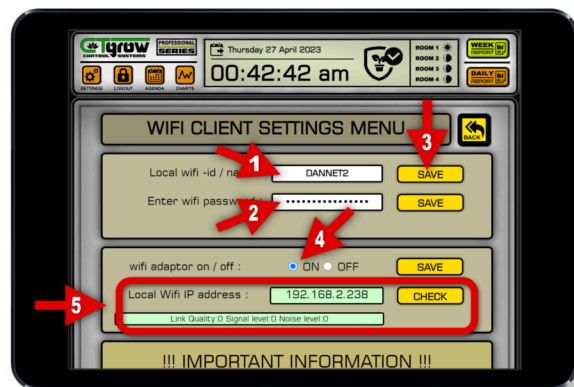


Figure 9.1.3



RCX-1 System Controller

09. LAN / WiFi / Access-Point setup (part 2)

03. WIFI SETUP (local WIFI network) part 2

When a WiFi connection is established, you can check the connection quality by looking at the signal strength displayed at the bottom of the menu. The controller will also display its new (WiFi) IP address in the menu (see **Figure 9.1.3-5**). If the signal strength is below 50%, we advise you to move the controller to a spot with better WiFi signal.

Once the WiFi connection is successful and the new IP address is visible with a good signal (see **Figure 9.1.3-5**), you can access the controller by typing the (WiFi) IP address into a web browser on a device connected to the same local WiFi/LAN network. Please note that for remote access, you may need to set up port forwarding on your router.

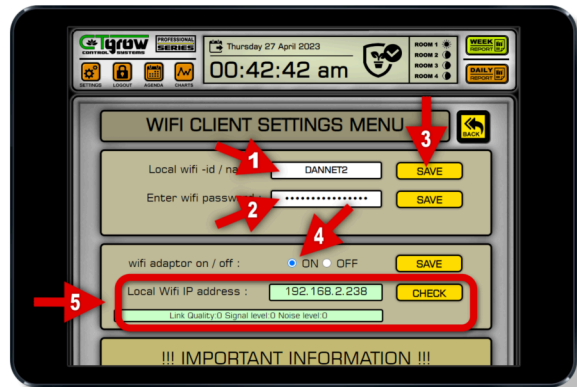


Figure 9.1.3

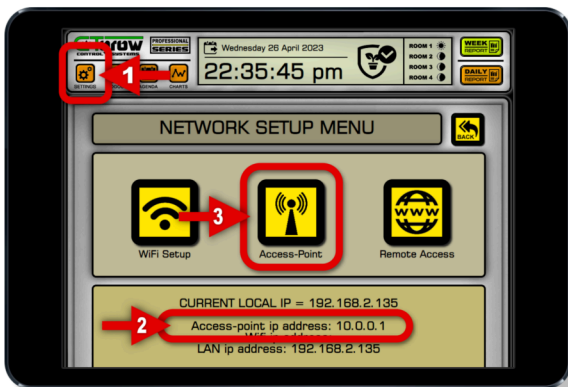


Figure 9.1.4

To modify the RCX-1 controller's access-point, you can enter a new password (See **Figure 9.1.5-2**) and save the changes by clicking on the [SAVE] button (as shown in **Figure 9.1.5-3**). Please note that changing the password will not alter the access-point name, which remains the same (as seen in **Figure 9.1.5-1**).

It is recommended to keep the access-point turned on at all times (as seen in **Figure 9.1.5-4**) as it serves as a direct means of communication with your controller in the event of a network failure or when there is no network at all.

It's important to note that your connection will be interrupted directly after you save the new settings, and you will need to login to the access-point with your new password. (as shown in **Figure 9.1.5-2**)

04. ACCESS-POINT SETUP

Caution: Making changes to the settings of the system's access point can potentially disrupt the connection with the controller, resulting in a loss of access or connectivity.

To access the system settings menu on the RCX-1, click the [SETTINGS MENU] button on the control bar (See **Figure 9.1.4-1**). Then select [SYSTEM MENU] and [network setup] to enter the network settings menu.

To change the access-point settings on your RCX-1 controller, simply press the [ACCESS-POINT] button located in the network setup menu. (see **Figure 9.1.4-2**)

Note: you can only change the Access-point password!

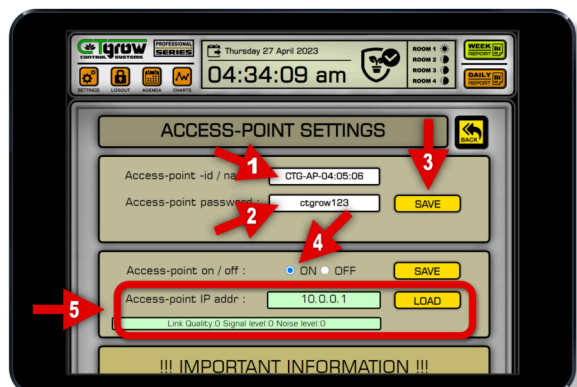


Figure 9.1.5



RCX-1 System Controller

10. Remote Access setup (Remote control)

01. Remote Access setup (Remote control)

From within the network menu, (see Figure 10.1.1) press the [Remote access] button. (see Figure 10.1.1-3) If the controller is connected to your local LAN network, (see Figure 10.1.1-2) you can use the remote control function to access and control your RCX-1 from a device outside your local network.

From the remote access menu you can select the option to turn Remote Access ON or OFF. (see Figure 10.1.2-1/2) This feature is known as Universal Plug and Play (uPnP) and is used on the RCX-1 controller. However, it is important to note that a LAN connection is required to use the remote access function.

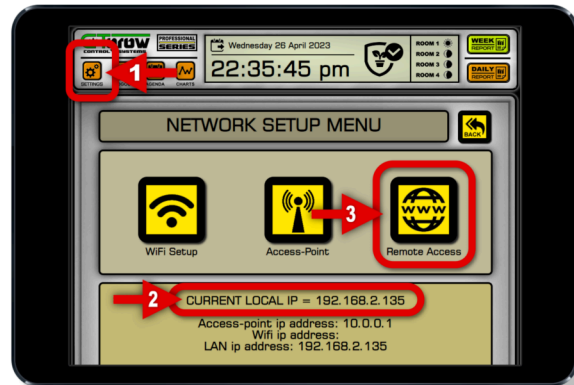


Figure 10.1.1

From within the network menu, (see Figure 10.1.1) press the [Remote access] button. (see Figure 10.1.1-3) If the controller is connected to your local LAN network, (see Figure 10.1.4-2)

you can use the remote control function to access and control your RCX-1 from a device outside your local network. From the remote access menu you can select the option to turn Remote Access ON or OFF. (see Figure 10.1.2-1/2)

This feature is known as Universal Plug and Play (uPnP) and is used on the RCX-1 controller. However, it is important to note that a LAN connection is required to use the remote access function.

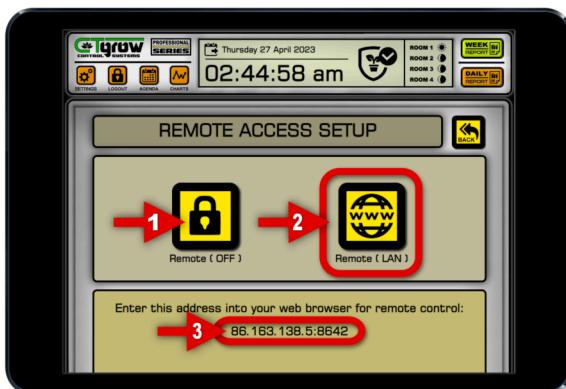


Figure 10.1.2

To use the Remote access function (uPnP), you need to enable it in the Remote access setup menu (see Figure 10.1.2-2) Once Remote access function (uPnP) is enabled, you may need to set up port forwarding on your router to allow access to the controller from outside your local RCX-1 controller.

After you have enabled Remote access and set up port forwarding on your router, you can access and control your RCX-1 from a device outside your local network. You can do this by typing the RCX-1's external IP address (including the :8642 part) (see Figure 10.1.5-3) into a web browser on the remote device.

This will bring up the RCX-1's login page, where you can enter your username and password to access the dashboard and control your RCX-1 remotely.

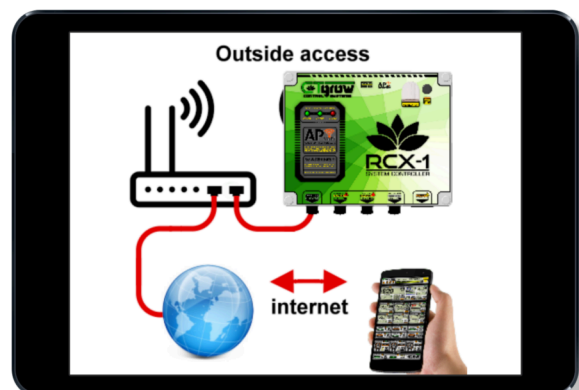


Figure 10.1.3



RCX-1 System Controller

11. Grow Cycles & day/night settings

01. Introduction to the room/zone cycles

The RCX-1 controller is equipped with 4 separate room/zone cycles, which allow you to customize your day and night cycle per room/zone. The status of each room/zone cycle is indicated by a [day or night] button (See Figure 11.1-1/4).

The cycle bar provides also other information such as the exact week and day of your current grow cycle per room/zone (See Figure 11.1-1/2), as well as the percentage of completed schedule (Figure 11.1-3).

To configure a cycle timer, click on the [CYCLE BUTTON] of the desired room/zone (See Figure 11.1-1/4) to bring up the cycle settings menu (refer to Figure 11.1.2).

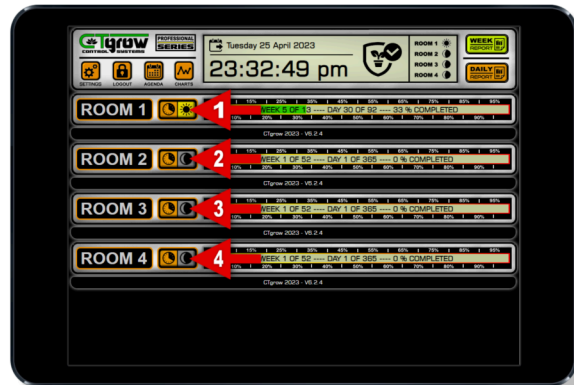


Figure 11.1

02. Setting a grow cycle for a room / Zone

Start by entering the desired start date for your grow schedule [day/month/year] (See Figure 11.2-1) and click on the [SAVE] button (refer to Figure 11.2-5). Next, set the number of weeks [Weeks in cycle] (0-52) that your cycle should take (See Figure 11.2-2) and entering your preferred number of weeks.

Next, go to [Start of daytime] (See Figure 11.2-3) and enter the desired time [hours/minutes] that you want your daytime program to start. Similarly, set the time you want your nighttime program to start, go to the [Start of nighttime] form (See Figure 11.2-4) and enter the desired time [hours/minutes] and press the [SAVE] button to save your selection.

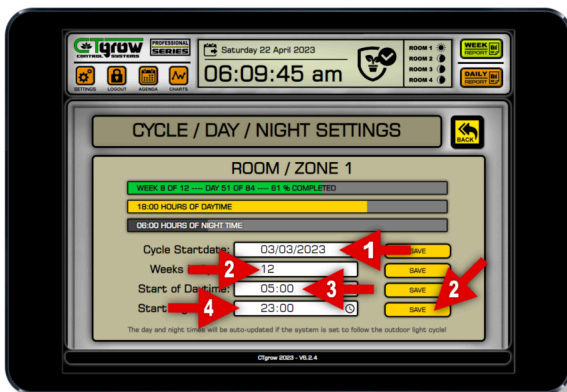


Figure 11.2

03. Inspecting the room/zone cycle settings

When done, Always inspect your settings one more time. This will ensure that your grow cycle is optimized for each room/zone, allowing for maximum efficiency and productivity (see Figure 11.1.3).

As soon as all the cycle settings are programmed and saved, the status bars above the settings fields will display the current status and day/night times (see Figure 11.1.3). This allows you to monitor the progress of your grow cycle (see Figure 11.1.3-1) and see the programmed day and night periods in hours for each room. (see Figure 11.1.3-2/3)

IMPORTANT: Units that are connected to a specific room will automatically follow the day/night settings of that room !!

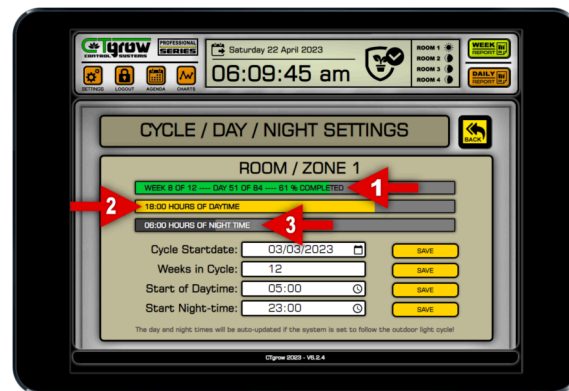


Figure 11.3



RCX-1 System Controller

12. Adding or removing sensor units (part 1)

01. Installing a sensor unit to the controller

Adding sensor units to the RCX-1 controller is a straightforward process. You can connect up to 4 sensor units in total to the RCX-1 controller. If you need to connect a sensor unit, simply follow the steps outlined on this page for each unit until all units are connected and functioning.

The new sensor units will be automatically recognized and displayed in room 1 on the controller's dashboard. To add new units to the RCX-1 controller, follow this procedure step by step. To begin, please ensure that the RCX-1 controller is powered on (See Figure 12.1.1) and that the green active light is illuminated, indicating that the controller is operational (See Figure 12.1.1-2).

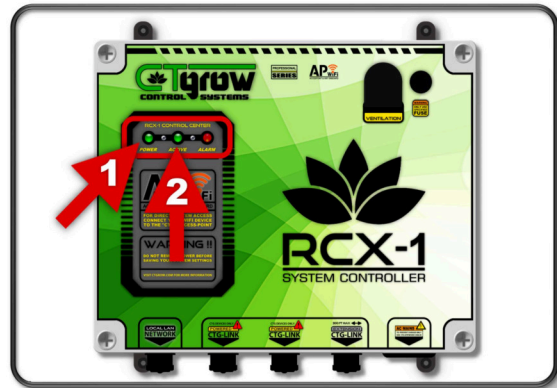


Figure 12.1.1

Once your new sensor unit has been securely mounted in its designated location, as per the instructions provided in the corresponding sensor unit's manual, you can proceed to connect it to the RCX-1 controller (See Figure 12.1.2-2).

Carefully remove the waterproof protection cap from one of the two RCX-1 onboard **POWERED CTG-LINK** port on the controller. Be carefully to avoid any damage to the connector or the controller itself. (See Figure 12.1.2-1).

Gently and unscrew the cap counter-clock wise. It is recommended to use clean and dry hands to prevent any moisture or debris from coming into contact with the connector, as this may affect the performance or longevity of the sensor unit and the controller.

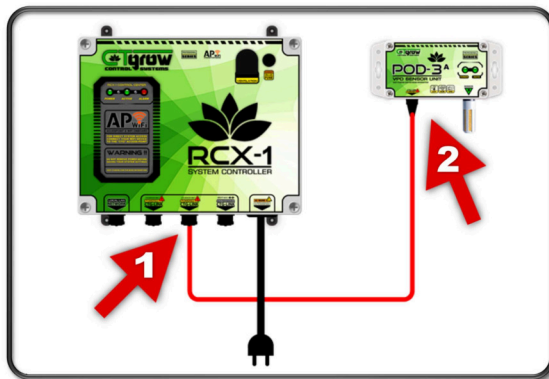


Figure 12.1.2

Gently plug in and fasten the **CTG-link** connector provided with the sensor unit, (See Figure 12.1.3-1), into one of the two available [**POWERED CTG-LINK**] ports on the controller, as shown in (See Figure 12.1.2). Ensure that the connection is tight and secure, but avoid to over-tighten to prevent any damage to the connector or the connector port.

TIP!! Make sure that the sensor unit's screw connector is straight on the threads when you start to fasten it. If you can't get the connector straight on to the [**POWERED CTG-LINK**] port, try turning it the opposite direction for a few turns until you feel a click, then try to screw it straight back on again!

See the next page for more information!

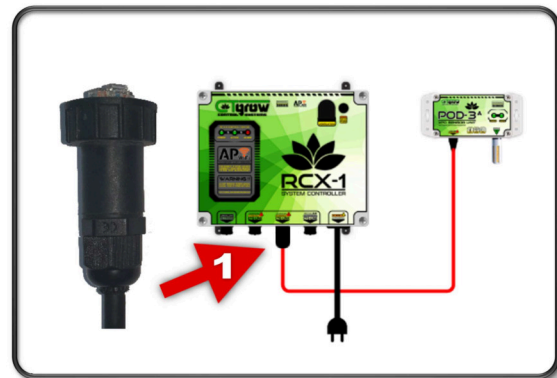


Figure 12.1.3



RCX-1 System Controller

12. Adding or removing sensor units (part 2)

02. Adding a sensor unit to the dashboard

When installing a new sensor unit, it is crucial to follow the specific installation recommendations outlined in the corresponding unit's manual. Each sensor unit may have unique procedures to follow for optimal performance.

Once the sensor unit has been successfully connected to one of the RCX-1 controller's powered CTG-LINK ports, the power light on the sensor unit should turn on, indicating a successful connection (see Figure 12.1.4-1).

Keep in mind that it may take up to 30 seconds for the controller to fully recognize and install the sensor unit. Once the sensor unit starts transmitting data, the green data LED should light up for one second every few seconds. (see Figure 12.1.4-2) (example is not included).

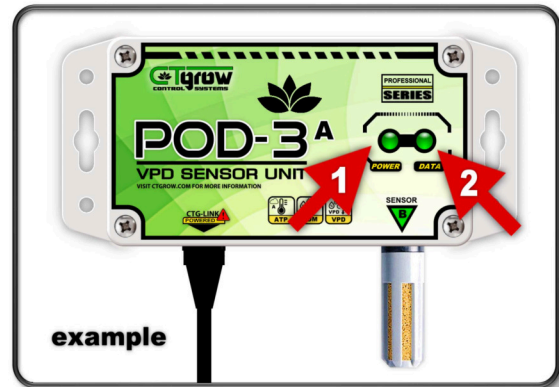


Figure 12.1.4

To confirm that the newly installed sensor unit is functioning properly, you can refresh the dashboard by clicking on the CTgrow logo on the top left corner of the screen, (See Figure 12.1.5-1).

Once the sensor unit is detected, it will automatically be added to room/zone-1 (See Figure 12.1.5-2). You can start to use the sensor-unit and program it with minimum and maximum (alarm) values for both day and night periods.

To access the sensor unit's value settings menu, press the [sensor menu] button on the unit, as shown in (See Figure 12.1.5-4/6). Note! different sensor units may have unique value settings or configurations, so it's recommended to consult the corresponding sensor unit's manual for specific instructions and recommendations.

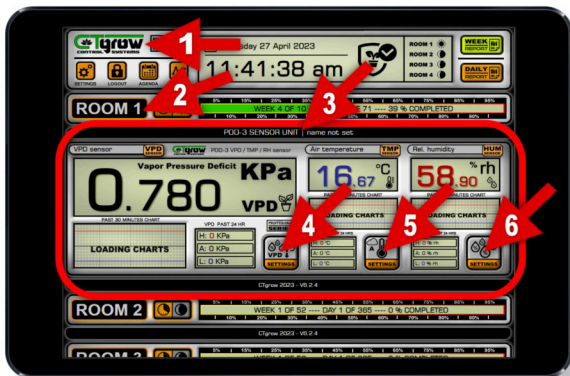


Figure 12.1.5

03. Change the sensor unit's name and room

To access the sensor unit settings menu on the RCX-1 dashboard, simply click on [SETTINGS] button located on the left-hand side of the dashboard. Then, click on [UNIT SETUP] and select [SENSOR UNITS] to enter the sensor unit menu (refer to Figure 12.1.6).

Within the RCX-1 sensor-unit menu, you can view all the connected sensor unit's numbers and models (refer to Figure 12.1.6-1/2) and customize the sensor unit's name (refer to Figure 12.1.6-3) and room assignment (refer to Figure 12.1.6-4). To assign a new name and room for the sensor unit, enter the desired information and click [SAVE] (as shown in Figure 12.1.6-5).

Continue to the next page!



Figure 12.1.6



RCX-1 System Controller

12. Adding or removing sensor units (part 3)

04. Delete a specific sensor unit's data*

**(only removes stored sensor values)*

This option allows you to reset and clear all stored sensor values on the RCX-1 controller, providing a fresh start for monitoring and recording new sensor data. Please note that deleting sensor values will not affect your saved sensor settings, ensuring that your configured preferences and settings remain intact.

From within the sensor unit settings menu, you will find the [CLEAR] button, (see Figure 12.1.7-6). Press the [CLEAR] button to delete all stored sensor values for this sensor-unit. After the deletion process is completed, the sensor unit will show that all 24H averages will be reset to 0, and it will take about 30 minutes before the charts become available again.

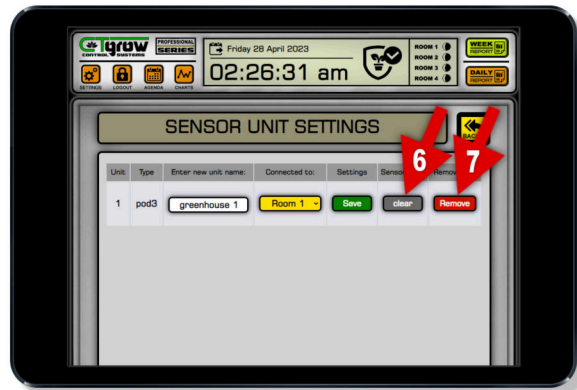


Figure 12.1.7

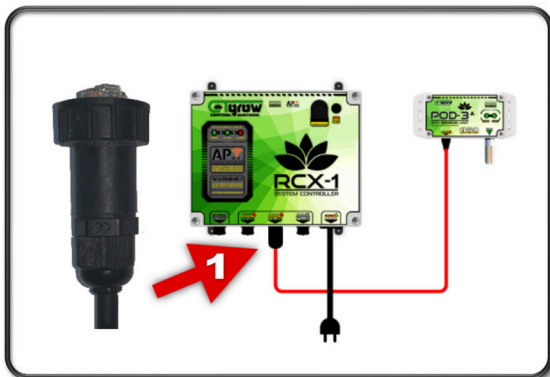


Figure 12.1.8

05. Permanently remove a sensor-unit

Before we can delete a sensor-unit from the dashboard, we need to unscrew and remove the connector of the sensor unit from the system (See Figure 12.1.8). Once the sensor-unit is disconnected, you may proceed!

In the sensor-unit settings menu, locate the sensor-unit that you want to remove/delete (See Figure 12.1.7-7) Press the red [REMOVE] button associated with the sensor unit that you want to remove, (see Figure 12.1.7) This will permanently remove the sensor unit from the dashboard and delete all the stored values and settings from the controller. (see Figure 12.1.9-1)

BEWARE this action cannot be undone !!

REMINDER!

It's very important to screw the waterproof caps back on any CTG-LINK PORT that is not in use, to ensure proper protection against water damage.

Please note that removing/deleting a sensor unit will completely remove all of its values and settings from the RCX-1 controller.

This action should be taken with caution, and you should make sure to backup any important data before proceeding. Once a sensor unit is removed, it will no longer be available for monitoring and recording sensor data on the RCX-1 controller.

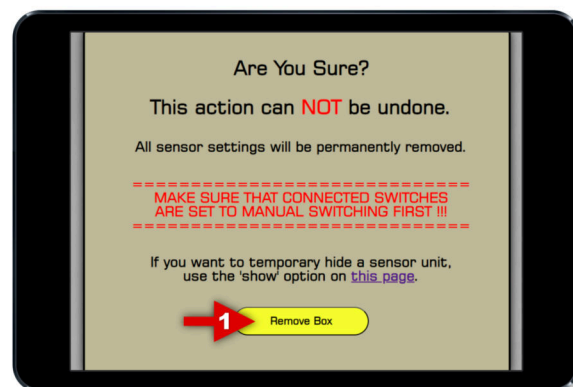


Figure 12.1.9



RCX-1 System Controller

13. Adding or removing switch units (part 1)

01. Installing a switch unit to the RCX-1

Adding switch-unit's to the RCX-1 controller is a easy process. You can connect up to 4 switch units in total to the RCX-1 controller. If you need to connect a switch unit, simply follow the steps outlined on this page for each unit until all units are connected and functioning.

The new switch units will be automatically recognized and displayed in room 1 on the controller's dashboard. To add new units to the RCX-1 controller, follow this procedure step by step. To begin, please ensure that the RCX-1 controller is powered on (See Figure 13.1.1-1) and that the green active light is illuminated, indicating that the controller is operational (See Figure 13.1.1-2).

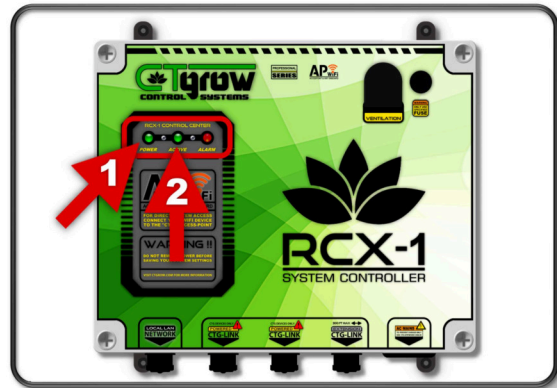


Figure 13.1.1

Once your new switch unit has been securely mounted in its designated location, as per the instructions provided in the corresponding switch unit's manual, you can proceed to connect it to the RCX-1 controller (See Figure 13.1.2-2).

Carefully remove the waterproof protection cap from one of the two RCX-1 onboard **POWERED CTG-LINK** port on the controller. Be carefully to avoid any damage to the connector or the controller itself. (See Figure 13.1.2-1).

Gently and unscrew the cap counter-clock wise. It is recommended to use clean and dry hands to prevent any moisture or debris from coming into contact with the connector, as this may affect the performance or longevity of the switch unit and the controller.

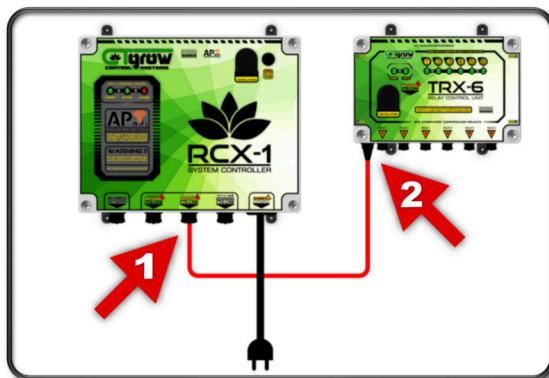


Figure 13.1.2

Gently plug in and fasten the **CTG-link** connector provided with the switch unit, (See Figure 13.1.3-1), into one of the two available **[POWERED CTG-LINK]** ports on the controller, as shown in (See Figure 13.1.2). Ensure that the connection is tight and secure, but avoid to over-tighten to prevent any damage to the connector or the connector port.

TIP!! Make sure that the switch unit's screw connector is straight on the threads when you start to fasten it. If you cant get the connector straight on to the **[POWERED CTG-LINK]** port, try turning it the opposite direction for a few turns until you feel a click, then try to screw it straight back on again!

See the next page for more information!

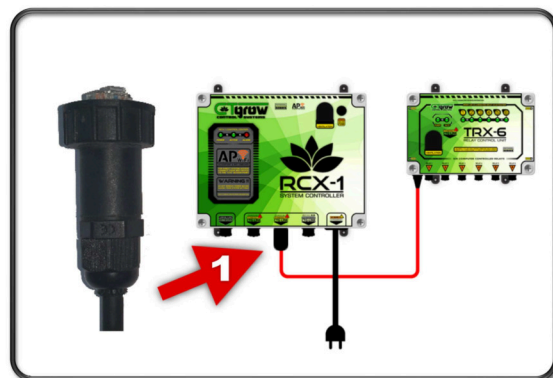


Figure 13.1.3



RCX-1 System Controller

13. Adding or removing switch units (part 2)

02. Adding a switch unit to the dashboard

When installing a new switch unit, it is crucial to follow the specific installation recommendations outlined in the corresponding unit's manual. Each switch unit may have unique procedures to follow for optimal performance.

Once the switch unit has been successfully connected to one of the RCX-1 controller's powered CTG-LINK ports, the power light on the switch unit should turn on, indicating a successful connection (see Figure 13.1.4-1).

Keep in mind that it may take up to 30 seconds for the controller to fully recognize and install the switch unit. Once the switch unit starts transmitting data, the green data LED should light up for one second every few seconds. (see Figure 13.1.4-2) (example is not included).

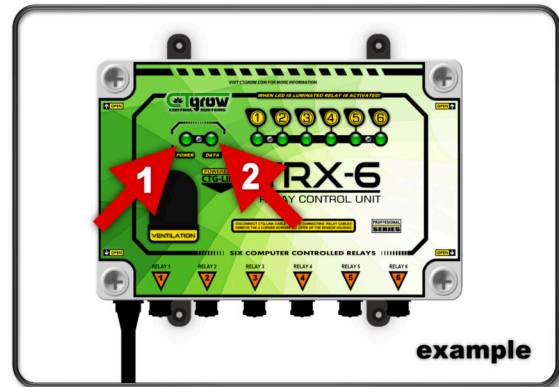


Figure 13.1.4

To confirm that the newly installed switch unit is functioning properly, you can refresh the dashboard by clicking on the CTgrow logo on the top left corner of the screen, (See Figure 13.1.5-1).

Once the switch unit is detected, it will automatically be added to room/zone-1 (See Figure 13.1.5-2). You can start to use the switch-unit and program it with minimum and maximum (alarm) values for both day and night periods.

To access the switch unit's value settings menu, press the [switch menu] button on the unit, as shown in (See Figure 13.1.5-4/6). Note! different switch units may have unique value settings or configurations, so it's recommended to consult the corresponding switch unit's manual for specific instructions and recommendations.

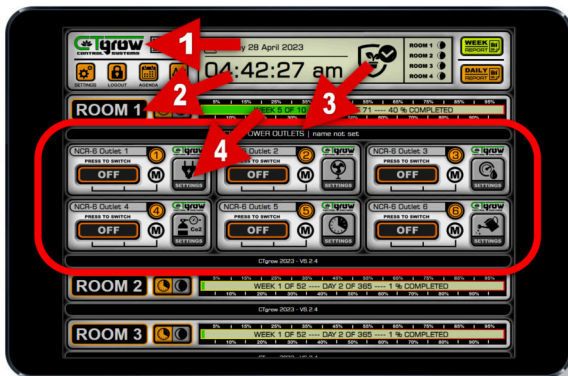


Figure 13.1.5

03. Change the switch unit's name and room

To access the switch unit settings menu on the RCX-1 dashboard, simply click on [SETTINGS] button located on the left-hand side of the dashboard. Then, click on [UNIT SETUP] and select [switch UNITS] to enter the switch unit menu (refer to Figure 13.1.6).

Within the RCX-1 switch-unit menu, you can view all the connected switch unit's numbers and models (refer to Figure 13.1.6-1/2) and customize the switch unit's name (refer to Figure 13.1.6-3) and room assignment (refer to Figure 13.1.6-4). To assign a new name and room for the switch unit, enter the desired information and click [SAVE] (as shown in Figure 13.1.6-5).

Continue to the next page!



Figure 13.1.6



RCX-1 System Controller

13. Adding or removing switch units (part 3)

04. Permanently remove a switch-unit

When it comes to deleting a switch-unit from the dashboard, it's important to follow the correct steps to ensure that the process is completed successfully. To begin, you'll need to unscrew and remove the connector of the switch unit from the system, which can be done by referring to (Figure 13.1.8) for guidance.

Once the switch-unit is disconnected, you can proceed to the switch-unit settings menu to locate the switch-unit that you want to remove. Once you've identified the switch-unit, press the red [REMOVE] button (See Figure 13.1.67-6). It's important to note that this action will permanently remove the switch unit from the dashboard and delete all the stored values and settings from the controller.

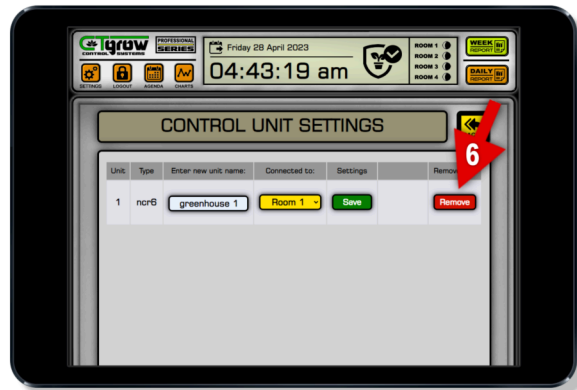


Figure 13.1.7



Figure 13.1.8

It's essential to make sure that you're removing the correct switch unit, as any data associated with it will be lost permanently. After confirming that you're removing the correct switch-unit, press the [REMOVE] button (See Figure 13.1.9-1) and wait for the process to complete. Once completed, you'll no longer be able to see the switch-unit in the dashboard and will need to manually remove the physical unit from the system as well.

By following these steps carefully, you can successfully remove a switch-unit from the dashboard without any issues. Make sure to double-check that you're removing the correct unit and proceed with caution to avoid any potential data loss or damage to the system.

BEWARE this action cannot be undone !!

REMINDER!

It's very important to screw the waterproof caps back on any CTG-LINK PORT that is not in use, to ensure proper protection against water damage.

Please note that removing/deleting a switch-unit will completely remove all of its settings from the RCX-1 controller.

This action should be taken with caution, and you should make sure to backup any important data before proceeding. Once a switch unit is removed, it will no longer be available for monitoring and recording switch data on the RCX-1 controller.



Figure 13.1.9



RCX-1 System Controller

14. Graphical Sensor charts functions

01. Graphical charts functions

When a sensor unit has been connected to the RCX-1 controller, the graphical charts functions will become available. The controller can show detailed graphical charts of every attached sensor. All sensors-units will have (6) time-span cycles, varying between the last hour up to a week (7 days). Long term data-charts (up to 5 years) are available through the weekly data reports.

The charts show details about the sensors values during the cycles and can help growers with real insight about their climate. All our charts are easily zoom-able and offer you the option to download them in png image format for further analysis on other devices. To use the charts function, follow the procedure below.

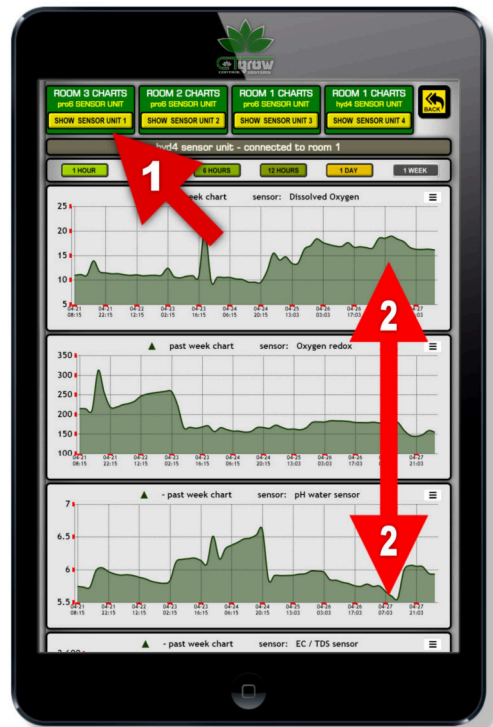


Figure 14.1

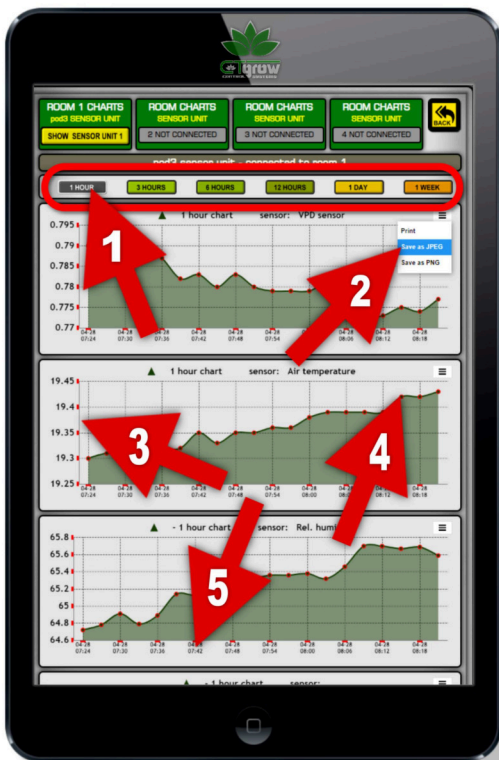


Figure 14.2

02. Selecting graphical sensor charts

To view sensor-unit data charts, locate and press the [CHARTS] button on the RCX-1 dashboard. From there, select the desired sensor-unit (See Figure 14.1.1). By default, the controller displays the past 1-hour values for all sensors connected to that unit (See Figure 14.1.1).

You can choose from 6 different time-span options to view graphical charts for the selected sensor unit's sensors (See Figure 14.1.2-1). Please note that only the available sensors are visible in the 6 block menu (See Figure 14.1.1).

To access all available charts, scroll down the page (See Figure 14.1.1-2). The charts provide detailed information such as exact sensor values for each separate sensor (refer to Figure 14.1.2-3/5). Additionally, you have the option to download the chart images separately in two formats: PNG or JPEG (refer to Figure 14.1.2-2).

For more information see your sensor-unit's manual.



RCX-1 System Controller

15. Daily and Weekly analysis reports

01. Selecting a Daily analysis report

The daily analysis reports are automatically generated and refreshed every new day of the week. (Monday to Sunday) The daily analysis reports provide valuable insights into your room/zone's performance, including detailed sensor information like: the minimum and maximum and average sensor values, current cycle progress and much more (24Hours).

You can use this information to track trends and identify any potential issues with your room/zone's. The daily reports are automatically stored on the controller for a maximum of six days, allowing you to access and review historical daily data whenever you need it.

(see Figure 15.1.2 below)

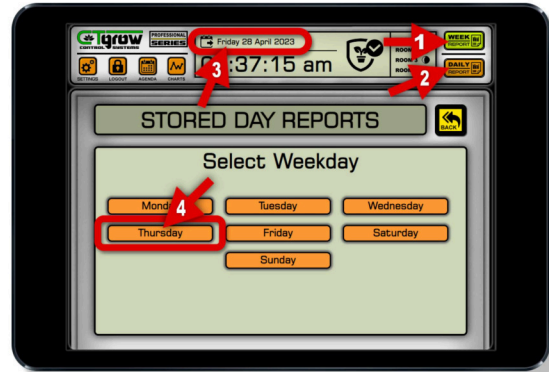


Figure 15.1.1

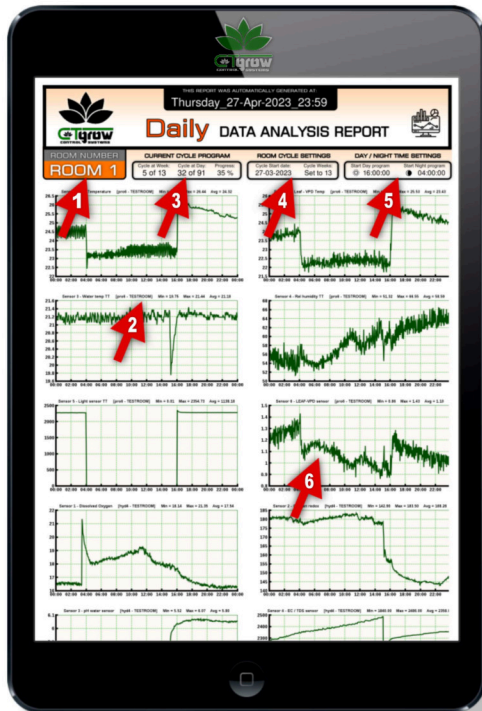


Figure 15.1.2

02. Selecting a daily analysis report

Selecting a Daily Analysis Report provides you with the most current data on your system's performance. To select a Daily Analysis Report, simply press the orange [DAILY REPORT] button on the right-side of the controller's dashboard to open/download the PDF report (see Figure 15.1.1-2).

This will open the Daily Reports menu (see Figure 15.1.1), where you can choose any of the six previous days of the week. (see Figure 15.1.1-4) It is important to note that the current day's report will not be available until the following day, so make sure to look for yesterday's report. (see Figure 15.1.1) The Daily Analysis Report covers all four rooms/zones within the controller (see Figure 15.1.2-1) and provides valuable insights into each area's performance.

The analysis report includes detailed information on the daily sensor averages, minimum and maximum values, (see Figure 15.1.2-2) and current cycle programs (see Figure 15.1.2-3). This information can help you quickly identify potential issues and make necessary adjustments to improve your system's performance. In addition to sensor data, the Daily Analysis Report also includes information on room cycle settings (see Figure 15.1.2-4), day and night times, (see Figure 15.1.2-5) and other essential details.

The report also includes charts and graphs (see Figure 15.1.2-6) to help you visualize trends in your system's performance. This information can be invaluable when identifying long-term patterns and making informed decisions. With this information at your fingertips, you can quickly assess your system's performance and take necessary action to optimize its operation. The Daily Analysis Report is available in PDF format, making it easy to read, print, and share. (see Figure 15.1.2)



RCX-1 System Controller

15. Weekly and Weekly analysis reports

01. Selecting a Weekly Analysis Report

In addition to the Daily Analysis Report, the RCX-1 controller also offers a Weekly Analysis Report. This report provides you with an overview of your system's performance over the previous week, from Monday to Sunday. One unique function of the Weekly Analysis Report is that it stores the reports for up to 5 years, providing you with a historical record of your system's performance over time.

You can use this information to track trends and identify any potential issues with your room/zone's. The Weekly reports are automatically stored on the controller for a maximum of six days, allowing you to access and review historical Weekly data whenever you need it.

(see Figure 15.1.4 below)



Figure 15.1.3

02. Selecting a Weekly analysis report

To select a Weekly Analysis Report, simply press the green [WEEKLY REPORT] button on the right-side of the controller's dashboard to open the weekly report menu (see Figure 15.1.3-1).

This will open the Weekly Reports menu (see Figure 15.1.3), where you can choose any month and year. (see Figure 15.1.3-4) It is important to note that the current week's report will not be available until the following Monday, so make sure to look for last weeks report or older one's. (see Figure 15.1.3-3) The Weekly Analysis Report covers all four rooms/zones within the controller (see Figure 15.1.4-1) and provides valuable insights into each area's performance.

The analysis report includes detailed information on the Weekly sensor averages, minimum and maximum values, (see Figure 15.1.4-2) and current cycle programs (see Figure 15.1.4-3). This information can help you quickly identify potential issues and make necessary adjustments to improve your system's performance. In addition to sensor data, the Weekly Analysis Report also includes information on room cycle settings (see Figure 15.1.4-4), day and night times, (see Figure 15.1.4-5) and other essential details.

The report also includes charts and graphs (see Figure 15.1.4-6) to help you visualize trends in your system's performance. This information can be invaluable when identifying long-term patterns and making informed decisions. With this information at your fingertips, you can quickly assess your system's performance and take necessary action to optimize its operation. The Weekly Analysis Report is available in PDF format, making it easy to read and print (see Figure 15.1.4).

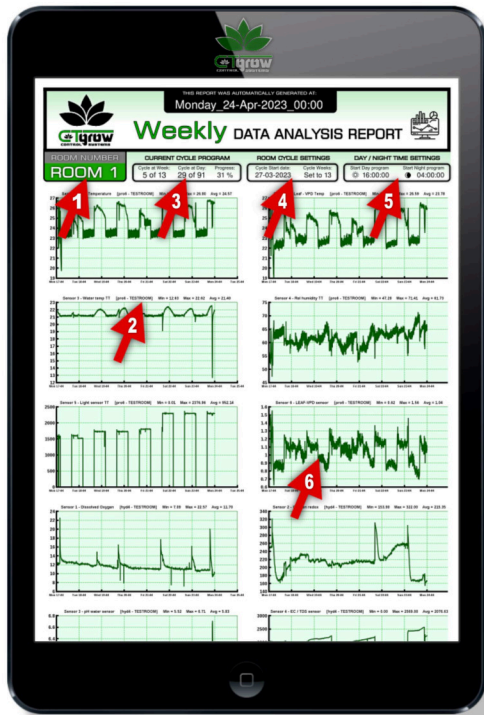


Figure 15.1.4



RCX-1 System Controller

16. System agenda setup & usage

01. The RCX-1 agenda function

The System Agenda is a feature in the RCX-1 controller that allows you to create and manage notes for various upcoming horticultural tasks. With the Agenda, you can schedule and keep track of important activities in your grow room, such as watering, feeding, pruning, or harvesting.

The Agenda allows you to keep track of daily tasks. It is important to note that the System Agenda is only for making notes on future horticultural tasks. It does not offer any automated functions or control over your grow room's systems. Instead, it provides you with a convenient way to plan and organize your grow room activities, ensuring that all essential tasks are completed on time.

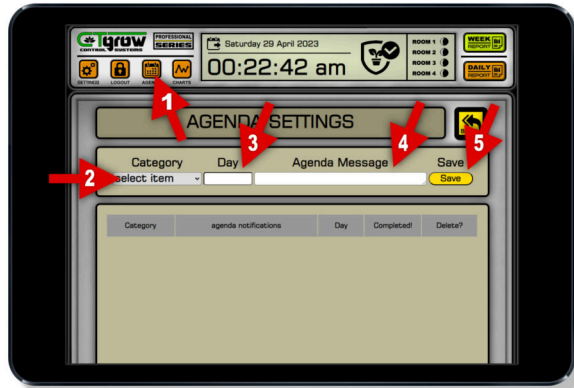


Figure 16.1.1

02. Adding a new item to the agenda

Setting up the system agenda is a straightforward process. To begin, navigate to the "Agenda" tab on the controller's dashboard (see Figure 16.1.1-1). From here, you can create a new agenda, simply press the [AGENDA] button on the controller's dashboard (see Figure 16.1.1-1).

Once opened, you can create a new item by selecting a Category item (see Figure 16.1.2-1). Next select the day number (in your cycle) for the task (see Figure 16.1.1-3). And finally add a description (see Figure 16.1.1-4) and press save (see Figure 16.1.1-5). Once you have added an entry to the System Agenda, you can view (see Figure 16.1.2-2), edit (see Figure 16.1.1-3/4), or delete it as needed (see Figure 16.1.2-5).



Figure 16.1.2

Overall, the System Agenda is a useful tool for any horticulturist who wants to stay on top of their grow room tasks. By keeping a well-organized Agenda, you can ensure that your plants receive the care and attention they need to thrive.



Figure 16.1.3



RCX-1 System Controller

17. Special sensor & control features (only for specialized sensor-units)

01. Setting your temperature values

The sensor value settings menu is a powerful tool that allows users to fine-tune the performance of specialized sensor units. The value settings menu offers additional features for some of CTgrow's specialized sensor-unit's.

It's important to note that while the value settings menu provides useful features for some of CTgrow's specialized sensor units, it's always a good idea to refer to the specific sensor unit's manual for more detailed information on its settings and functions. The sensor-unit manual will provide you with more information of the sensor-unit's capabilities and how to use them to optimize your grow room's performance. (see Figure 17.1.1)

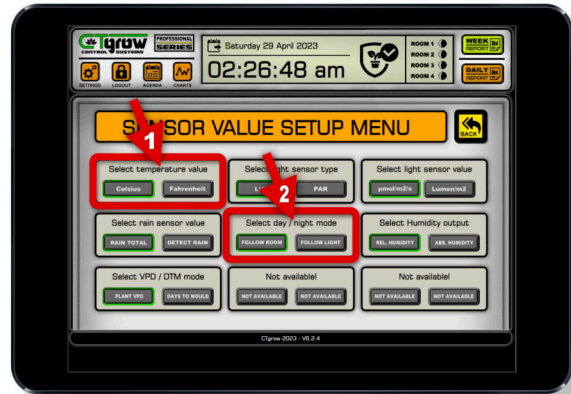


Figure 17.1.1

02. Storing values like: Celsius or Fahrenheit

The special features include displaying and storing temperature in Celsius or Fahrenheit by selecting the option in the menu. (See Figure 17.1.1). The controller also offers an option to modify room/zone's day and night behavior based on light. This mode works with all our light sensor-units (See Figure 17.1.1-2).

In addition to the day/night mode, the light sensor in CTgrow's sensor-unit offers other special features, such as the ability to represent its output values in LUX or PAR (PPFD) (See Figure 17.1.2-2). Another of these special features includes the selection between rain detection and rain volume, that can be used with CTgrow's weather stations. (See Figure 17.1.2-1).

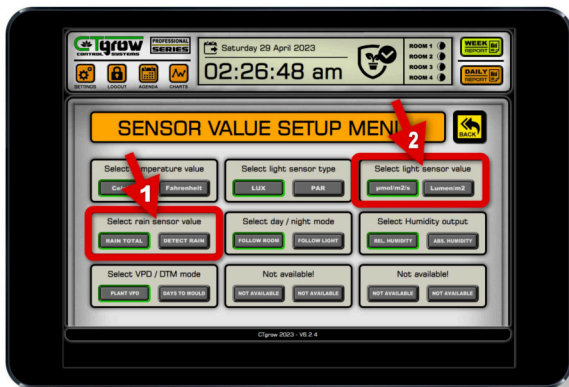


Figure 17.1.2

CTgrow's PRO-6 sensor-unit's provide growers with a unique and specialized feature that allows them to change between VPD values or DTM (Days to mold) measurements (See Figure 17.1.3-2). This measurement provides growers with an estimation of how many days it would take for mold to appear in the current environmental conditions. This is especially useful for growers who are dealing with high humidity levels, as mold can easily develop and negatively affect plant growth.

Another special feature of CTgrow's PRO-6 sensor-unit is the ability to switch between relative or absolute humidity values. This feature enables growers to monitor the moisture content of the air surrounding their plants and adjust the environmental conditions accordingly. (See Figure 17.1.3-1)

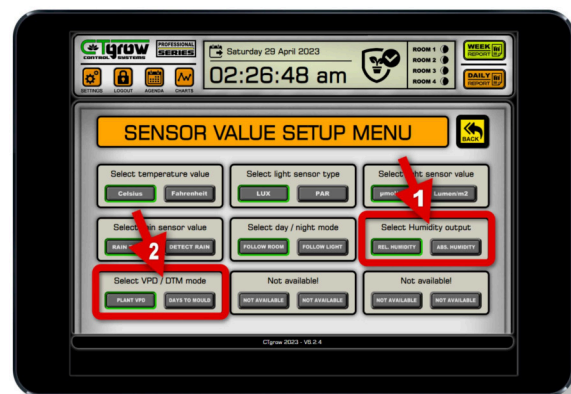


Figure 17.1.3



RCX-1 System Controller

18. Installing system updates

01. Check for available updates

To ensure a successful software update of your RCX-1 controller, it's crucial to have a stable and reliable internet connection through a LAN cable. This allows the update program to download the necessary files without interruption, which is essential to avoid any potential issues during the update process.

Keeping your RCX-1 controller up to date with the latest software upgrades ensures that you can take full advantage of the latest features and improvements and get the best possible results from your system. Therefore, it's recommended to regularly check for available software updates and install them as soon as possible to keep your RCX-1 controller up to date.

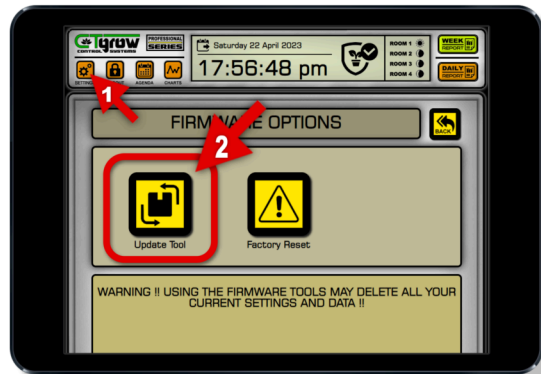


Figure 18.1.1

DO NOT INTERRUPT THE UPDATE PROGRAM OR POWER-OFF YOUR CONTROLLER BEFORE THE UPDATE IS COMPLETED !!

To check for and install available software updates for your RCX-1 controller, Press the [SETTINGS] button located on the RCX-1 dashboard (See Figure 18.1.1-1). Select the [SYSTEM TOOLS] button to open the System Tools menu. Once you're in the System Tools menu, select the [UPDATE TOOL] button (refer to Figure 18.1.1-2).

Whenever there is a new software update available!, the controller will automatically download and install it onto your RCX-1 controller. It's important to note that during the update process, your controller will display a **loading screen** until the update is completely installed. (See Figure 18.1.1-1).

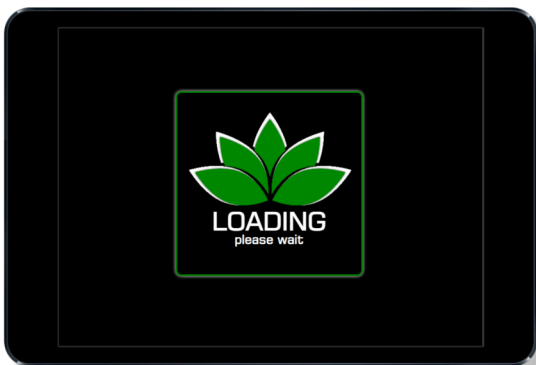


Figure 18.1.2

Do not interrupt the update program at any point, as it can potentially damage your controller's software.

The controller will return to the dashboard when the installation is finished. If your RCX-1 controller is already up to date with the latest software version, it will display the current version on the screen. (See Figure 18.1.1-1).

This provides you with the assurance that your controller is running on the latest software and is compatible with the latest CTgrow units. Checking the software version regularly is important to ensure that your controller remains up to date and that you're taking advantage of any new features or improvements. If there's a new software update available, you can easily install it following the steps mentioned earlier.



Figure 18.1.3



RCX-1 System Controller

19. E-mail alerts & sensor warnings

01. Get Alert messages in your mailbox

When the user settings have been successfully set up (See chapter 08), the controller can be used to send warning & alarm messages to your email address.

These messages can contain alerts such as sensor values that are out of bounds (See Figure 19.1.), recovery from a power outage, and many more. Note that the controller needs a stable Internet connection for the alert messages to work (see Chapter 09).

We highly recommend users to make use of Google Gmail, as it provides the easiest way to use all the additional functions that come with the email warnings feature. With email warnings, users have the possibility to log in to the system directly from the email.

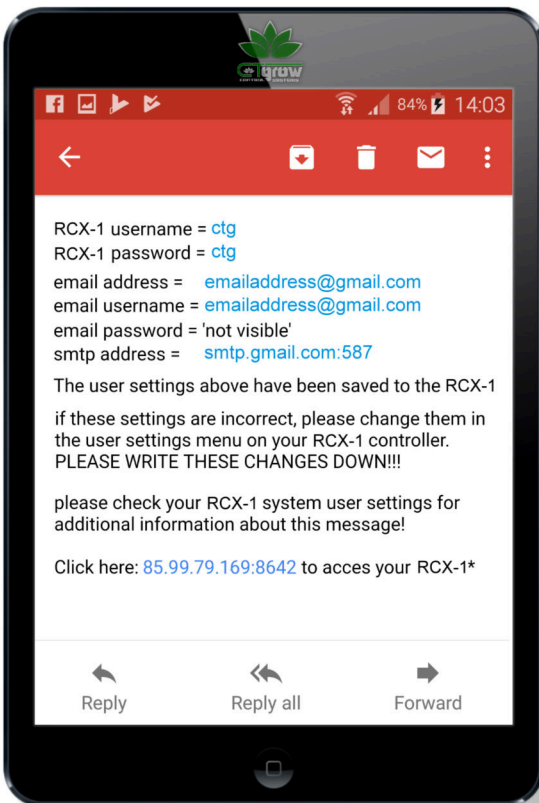


Figure 19.1.2

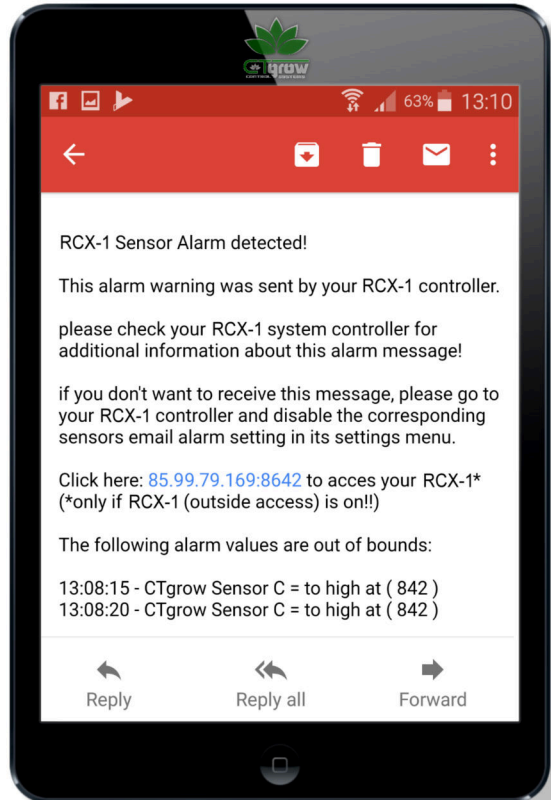


Figure 19.1.1

If you wish to receive warnings and alarms from your controller via email, you have the option to set up your email account (refer to chapter 08 Figure 8.1.2-4/6).

When setting up Gmail, you always need to use Google's special "app passwords" do **NOT** use your personal Gmail password. You can Google how to use Google's "app passwords" and create a special "app passwords" for your RCX-1 controller's email.

When changing any details in your user settings, The RCX-1 will automatically send an email message with your new user-name & password to your selected email account (this can take a couple of minutes depending on your email provider). (See Figure 19.1.2)

TIP! Wait for the email to arrive to assure the settings are working!



RCX-1 System Controller

20. Power-off & Reboot the RCX-1 controller

01. Powering off the RCX-1 controller

To completely power-off the RCX-1 system controller it's always advised to remove its power cable, but before that, you should always power-off the controller first. Press the [SETTINGS MENU] button (see Figure 20.1.1-2) located on the top left of the dashboard. This will take you to the systems settings menu, where you will find the [POWER OFF] button (see Figure 20.1.1-2).

The [POWER OFF] button (see Figure 20.1.1-2) allows you to power off your RCX-1 controller. When the green system led is off, you're ready to unplug the power-cable. (see Figure 20.1.3-2). It's important to note that you should only use this button when you want to turn your controller completely off, as it will only power back on after re-connecting the power-cable again.

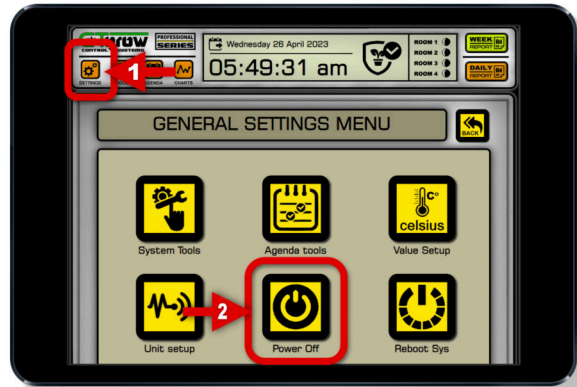


Figure 20.1

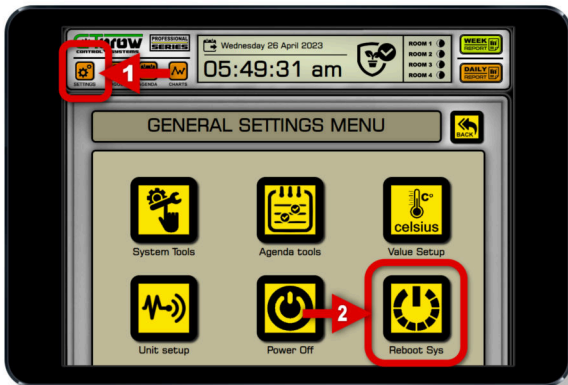


Figure 20.2

02. Rebooting the RCX-1 controller

By following these simple steps, you can quickly and safely reboot your controller and resume your operations with minimal downtime.

To reboot/restart the RCX-1 controller, access the settings setup menu by clicking on the [SETTINGS MENU] button located on the top left of the dashboard (refer to Figure 20.1.2-1).

Then, click on the [REBOOT SYS] button (see Figure 20.1.2-2) to initiate the reboot process. Wait for the process to complete and for the controller to come back to active. the green system LED to turn off before proceeding to the next step.

03. Check the led-display on the RCX-1

To verify the status of the RCX-1 check the LED-display (refer to Figure 20.1.3-1/2/3). The green power light should be lit when the unit is powered on, and the active light should be lit when it's functioning correctly.

If the controller is rebooting, wait for the active light to turn green. Once the reboot process is complete, the active and alarm lights will blink fast for about 8 seconds. (refer to Figure 20.1.3-2/3).

Checking the LED-display is a quick and easy way to troubleshoot any issues that may arise and ensure that the RCX-1 controller is functioning properly. Familiarizing yourself with the LED indicators can help you quickly determine the current state of the controller.

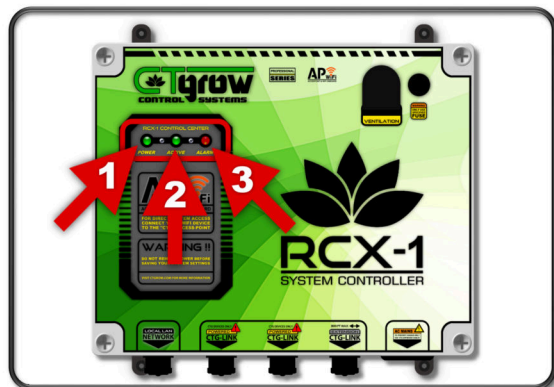


Figure 20.3



RCX-1 System Controller

21. System back-up and recovery procedures

01. Creating and downloading a back-up file

To manually backup your controller's data. Access the controller's settings menu by clicking on the [SETTINGS MENU] button (refer to Figure 21.1.1-1). Next, press the [SYSTEM MENU] button to open the system settings. Press the [SYSTEM BACKUP] button to open the backup settings. Click on the [CREATE BACKUP] button (See Figure 21.1.1-2), to begin the manual backup process.

The new back-up file will be automatically downloaded to your web browser. To upload and restore an update to the controller, click on the [CHOOSE FILE] button (See Figure 21.1.1-5) and select your locally stored file. When your backup file has been successfully uploaded, you may press the [UPLOAD BACK-UP] button (See Figure 21.1.1-6) to restore the backup file.

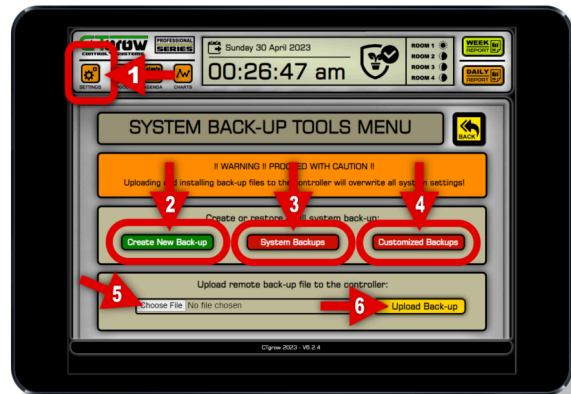


Figure 21.1.1

02. Automatic backups and restoring them

To restore one of the automatically made system backups directly back to your controller, Click on the [SYSTEM BACKUPS] button (See Figure 21.1.1-3), to open up the automatic backup system menu (See Figure 21.1.2).

From this menu you can either download or directly restore one of the automatically made system backups. Press the [RESTORE] button (See Figure 21.1.2) next to the backup file you want to restore back to the RCX-1 controller.

To download one of the automatically created backups you press the [DOWNLOAD] button (See Figure 21.1.2). To restore the downloaded backup file back to the RCX-1 controller please refer to part 01 of this page.

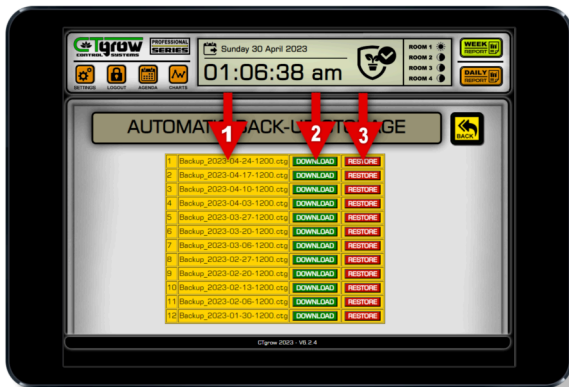


Figure 21.1.2

03. Custom made backups & restoring them

To make a custom back-up of your current system setup, Click on the [CUSTOMIZED BACKUPS] button (See Figure 21.1.1-4). To open up the custom backup system menu (See Figure 21.1.2). From this menu you can either download (See Figure 21.1.3-2), delete (See Figure 21.1.3-3), or directly restore (See Figure 21.1.3-4) one of the custom made system backups.

Press the [RESTORE] button (See Figure 21.1.3-4) next to the backup file you want to restore your custom backup back to the RCX-1 controller. To download one of the custom created backups, you press the green [DOWNLOAD] button (See Figure 21.1.3-2). To restore the downloaded backup file back to the RCX-1 controller please refer to part 01 of this page.

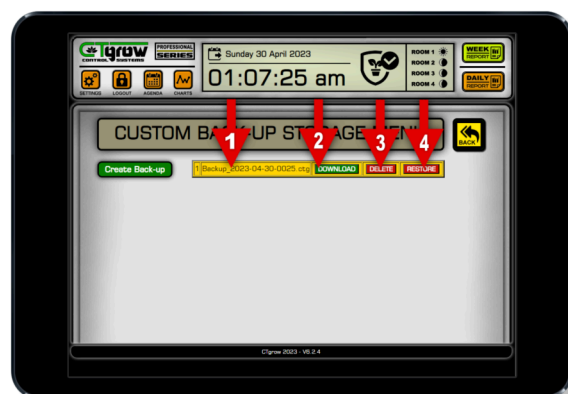


Figure 21.1.3



RCX-1 System Controller

22. Reset the RCX-1 system to factory settings

01. The factory reset procedure explained

Performing a factory reset on the RCX-1 controller will erase all data and settings, including your username, password, and email alert settings, and restore the controller to its original factory state while still retaining the latest software version. This process is irreversible, and it is essential not to disconnect the power cable during the reset procedure or reboot.

To start a factory reset on the RCX-1, Access the RCX-1 settings menu by clicking on the [SETTINGS MENU] button (See Figure 21.1-2). Next, press the [SYSTEM MENU] button to open the system settings. From within the system menu, press the [FIRMWARE TOOLS] button to open the firmware menu. (See Figure 22.1.1)



Figure 22.1.1

02. Start the factory reset procedure

Press the [FACTORY RESET] button (See Figure 22.1-2) to start the reset procedure. Note that once you have clicked this button, you cannot cancel the reset process.

After clicking on the [FACTORY RESET] button, a page asking for re-confirmation will appear (See Figure 22.1.1), asking you to press the [FACTORY RESET] button again to proceed. (See Figure 22.1.1-2)

Please note that you should only press this button once and wait for the controller to reboot itself to its original factory state, which will retain the latest software version. It is essential to ensure that you do not unplug the power from the RCX-1 controller during this process, as it may cause severe damage to the device.



Figure 22.1.2

03. After the factory reset procedure

Once the factory reset procedure is fully complete, the controller will reboot automatically, which may take some time, so it is vital to be patient during this period.

It may take up to five minutes for the controller to reset and restart. After the reset is complete, the controller will return to its original factory state, and you can log in with the default login data.

Please note that after the factory reset, your personal login data will be deleted, and you will need to set up the controller with your preferred settings and programs again.

The default login data can be found at chapter 05 of this user manual. (See Figure 22.1.3)

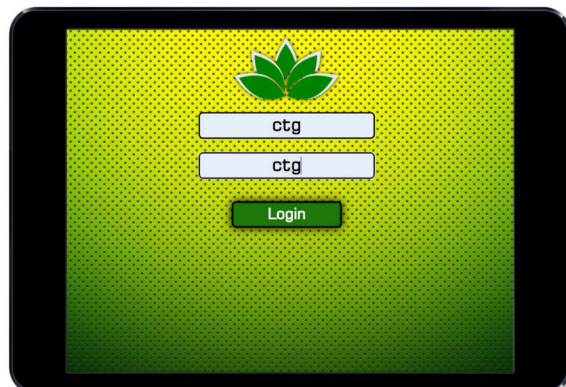


Figure 22.1.3



RCX-1 System Controller

RCX-1 Specifications and Dimensions



RCX-1 unit Specifications:

Unit name / model number	: RCX-1 system controller	: RCX-1 system controller
Dimensions HxWxD (unit only)	: ± 19.5 x 27.0 x 12.5 CM	: ± 7.5 x 10.65 x 4,8 Inch
CTG-LINK PORTS	: 3 (1x EXTENDED) (2x POWERED)	: 3 (1x EXTENDED) (2x POWERED)
Maximum units (optional)	: 4x sensor / 3x switch/pump unit	: 4x sensor / 3x switch/pump unit
Communication options	: 1x LAN, 1x wifi (2.4g), 1x AP (2.4g)	: LAN, wifi, Access-point (2.4G)
Access-point control radius	: ± 30Mtr	: ± 90 Ft.
Power cable length	: ± 100 CM	: ± 39.5 Inch
Working temperature	: 0°C ~ 70°C	: 32°F ~ 158°F
Operating voltage /	: 110v ~ 230v AC 50/60Hz	: 110v ~ 230v AC 50/60Hz
Power consumption (NO LOAD)	: <20 Watt	: <20 Watt
Avg RCX-1 unit lifespan	: >5 years	: >5 years
RCX-1 unit Warranty	: 1 Year	: 1 Year