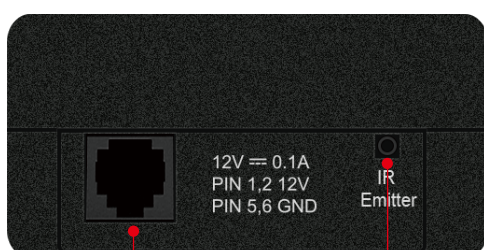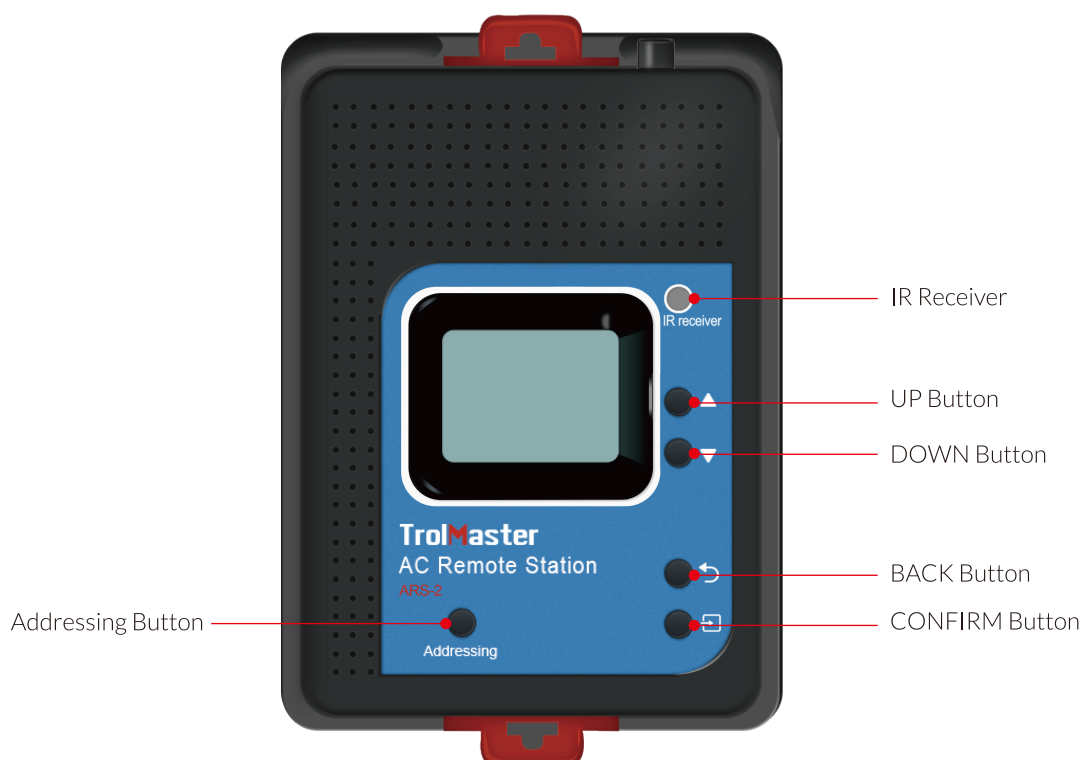# AC Remote Station (ARS-2)
User Manual

OVERVIEW

The ARS-2 is designed for use with the TrolMaster Hydro-X/Tent-X/Green-X Control System (including HCS-2, HCS-3, TCS-1, GCS-1). It functions as a universal remote control for any IR (infrared) remote-controlled AC unit, particularly mini-split systems. The ARS-2 provides flexibility to control the temperature throughout your day by programming your AC unit with separate Day and Night settings. By connecting the ARS-2 to your compatible TrolMaster controller, you gain the ability to easily and automatically control your remote-controlled air conditioner. The ARS-2 learns the IR signals from your AC's original remote control.

The ARS-2 is an evolution of the ARS-1. A key difference is that the ARS-2 can learn and control temperature values for AUTO, COOL, and HEAT modes, while the ARS-1 was limited to selecting temperature values under only one mode. Once connected and configured, the ARS-2 will send the desired Day/Night temperature setpoint to your AC automatically, based on the photocell & temperature sensor status and your settings in the controller. In conjunction with the controller and its connected sensors, ARS-2 will then automatically send the appropriate IR commands to your AC unit based on the photocell and temperature sensor status and your defined settings. This enables precise automatic control based on day and night cycles. You can configure distinct temperature setpoints for Day and Night, and the system will manage your AC unit to maintain the active period's setpoint.

The ARS-2 also provides one crucial capability to strategically set the temperature parameters for one of the periods (Day or Night) such that the mini-split unit remains effectively turned completely off during that time. This offers flexible, automated environmental control tailored to the specific needs of day and night cycles, including the ability to designate an 'idle' or 'off' period without manual intervention.

IR Receiver

UP Button

DOWN Button

BACK Button

CONFIRM Button

Addressing Button

TrolMaster
AC Remote Station
ARS-2

Addressing

12V ⎓ 0.1A
PIN 1,2 12V
PIN 5,6 GND

IR
Emitter

RJ12 Cable Socket

IR Emitter Hole

TrolMaster
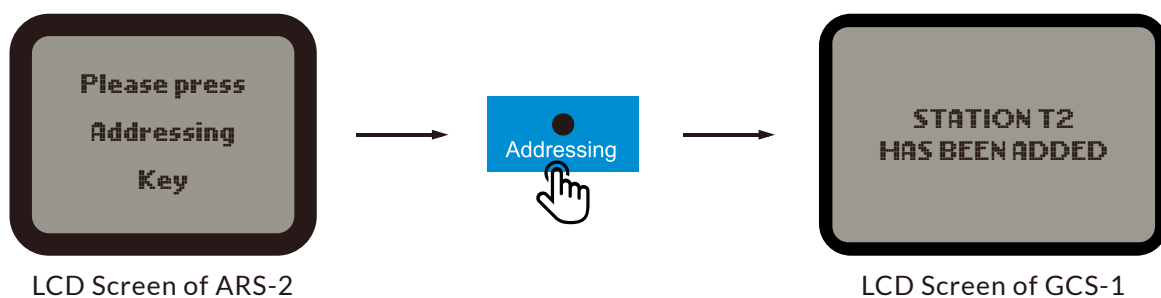
Micro SD

Micro SD Slot

FEATURES

- Seamless Connectivity with TrolMaster Control System
- Universal Remote Control for Mini-Split AC Systems and compatible window-type AC units
- Ability to Learn and Control Temperature Values for AUTO, COOL, and HEAT Modes
- No Extra Power Needed (powered via RJ12 cable)
- Micro-SD Slot for Firmware Updates
- Back panel mounting for installation

INSTALLATION

1. Pull the 2 tabs outward on the unit to release the mounting bracket.
2. Mount the bracket to a wall or surface near the remote-controlled AC unit. The ARS-2 mounts via its back panel.
3. Connect the ARS-2 to the Hydro-X system (HCS-2, HCS-3, TCS-1, GCS-1) using a supplied RJ12 cable. Use the DEVICE port on the Hydro-X controller.
4. Connect the accessory IR Emitter to the ARS-2 unit using the jack on the top panel.
5. Fix the IR Emitter on the wall or surface and point it towards the AC unit's IR receiver.
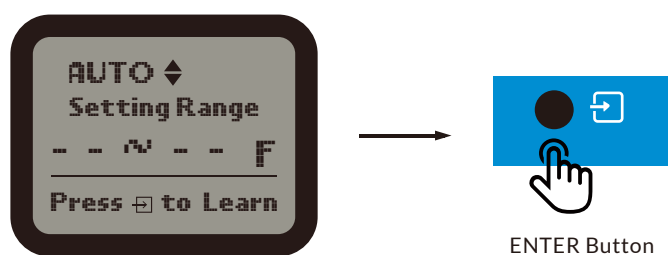
OPERATION INSTRUCTIONS

1. Address Assignment

LCD Screen of ARS-2   LCD Screen of GCS-1

- When first using the ARS-2 AC Remote Station after power-on, the LCD screen will display "Please press Addressing key". This means the controller has not yet assigned an address to the ARS-2.

- Press the Addressing button on the ARS-2 to initiate the address assignment process.

- Your controller will assign an address, and the controller's LCD screen will display a message like "Station T2 has been added".

- **Note:** The assigned address (like T2) is not a fixed product code but depends on the connection sequence of temperature devices to the controller. The first device connected is T1, the second is T2, and so on. You can verify the assigned address on the controller's device status menu.

2. Remote Code Learning Process

Before the ARS-2 can control your AC, it must learn the infrared remote control codes from your AC's original remote.
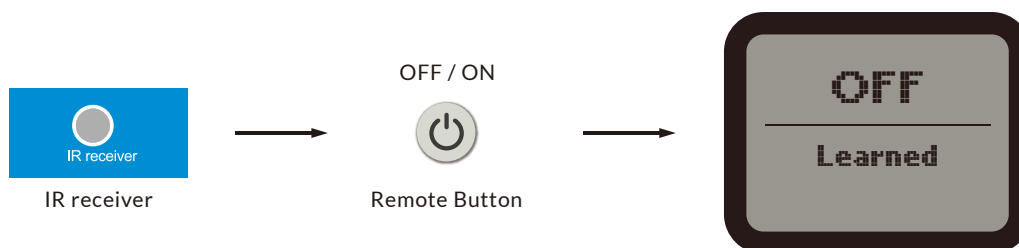
ENTER Button

- **[Starting Learning]**
  When the ARS-2 has not learned the codes, its LCD screen will show the Setting Range page with "-- ~ -- ° F" displayed in the upper half, indicating no codes have been learned. The lower half will show "Press Enter To Learn". Press the Enter button on the ARS-2 to begin the learning process.
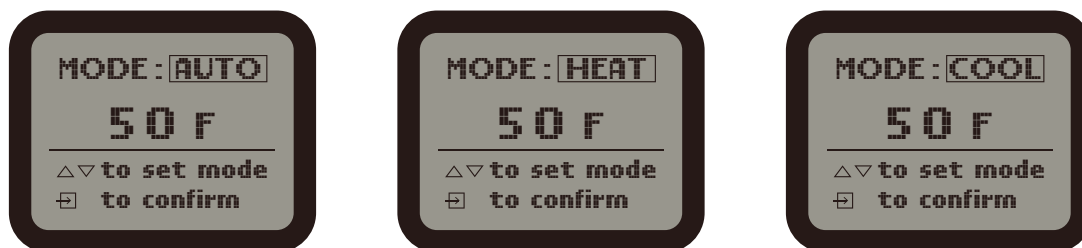

- **[Learning the OFF Signal]**
  The upper half of the ARS-2 LCD screen will display "OFF" and keep flashing for 2 minutes. During this time, adjust your AC's original remote to the ON mode (if applicable)
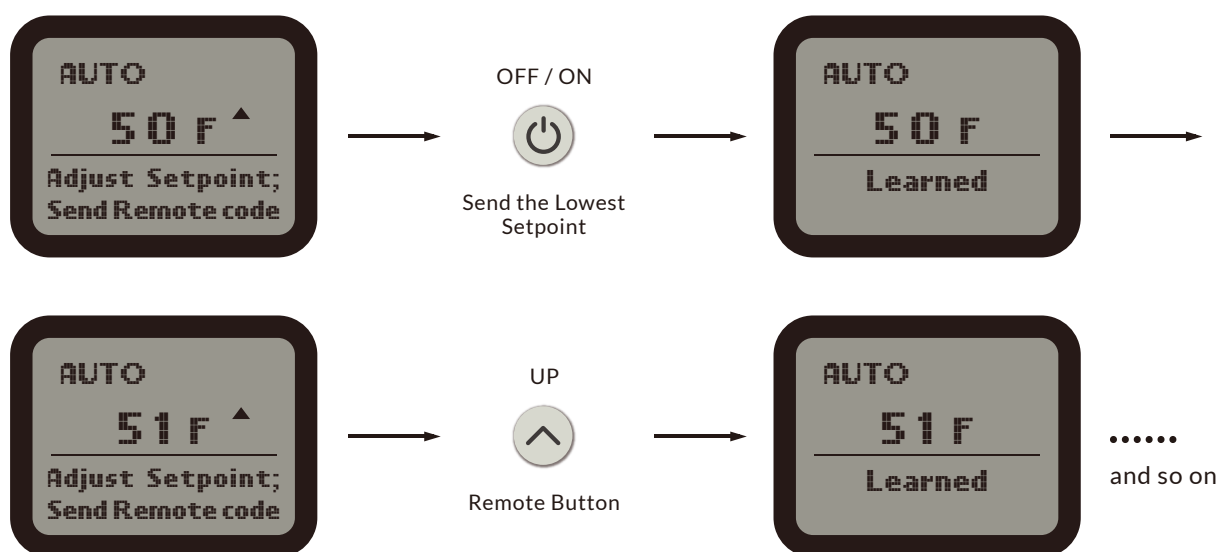

IR receiver

OFF / ON

Remote Button

Point the remote at the IR receiver on the ARS-2. Send the OFF signal by pressing the POWER button on your AC's remote. The ARS-2 LCD will display "Learned" in the lower part, indicating the OFF code was successfully learned.
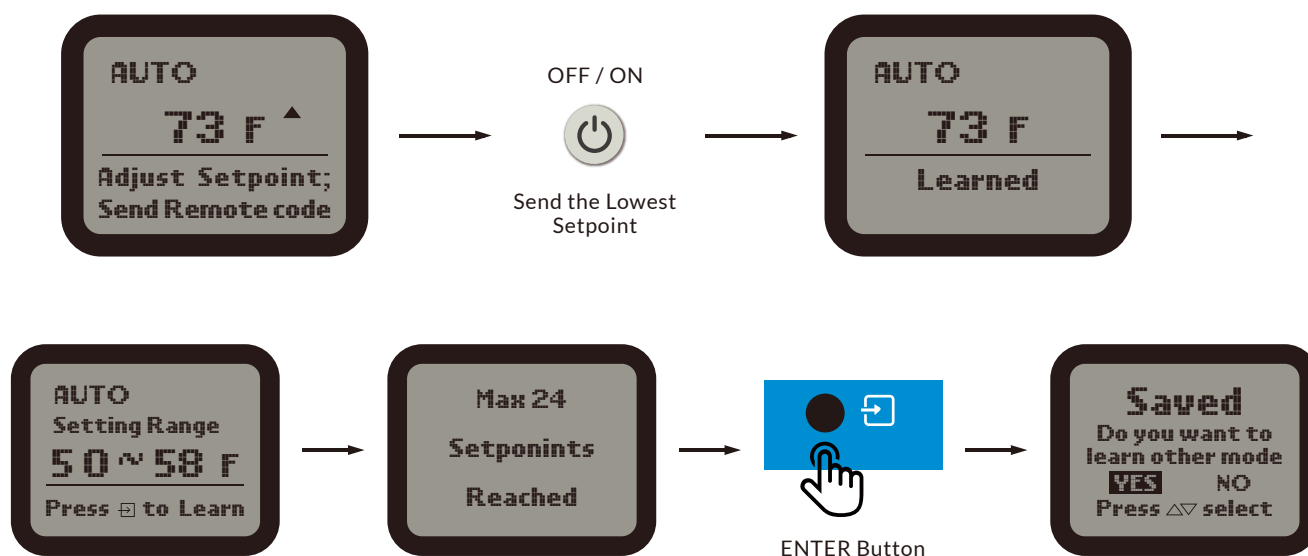
MODE : AUTO
50 F
△▽ to set mode
↵ to confirm

MODE : HEAT
50 F
△▽ to set mode
↵ to confirm

MODE : COOL
50 F
△▽ to set mode
↵ to confirm

- **[Learning Temperature Setpoints]**
  Crucially, after learning the OFF code, the ARS-2 learning screen will automatically advance to the next learning screen to learn temperature values for multiple modes: AUTO, HEAT, and COOL. You will need to repeat the temperature learning sequence described above for each mode you wish to control (e.g., complete the range for AUTO, then adjust your remote to HEAT mode and repeat the range learning, then adjust your remote to COOL mode and repeat).

  1. The lowest temperature value (e.g., 50 ° F or 10 ° C) will be flashing for 2 minutes. The lowest possible temperature value displayed ranges from 50°-95°F (10~35°C).
  2. Adjust your AC's original remote to the lowest temperature setpoint you want to control and the desired operating mode (e.g., COOL mode, 50°F).
  3. Adjust the temperature value displayed on the ARS-2 LCD to match the lowest setpoint on your remote using the UP/DOWN buttons on the ARS-2.
  4. Point your remote at the IR receiver on the ARS-2 and send the signal for that setpoint by pressing the relevant button (e.g., Power or UP/DOWN on your remote). The ARS-2 LCD should display "Learned".
  5. The ARS-2 display will automatically increase the learning setpoint by 1 degree. For unary remotes, you would then send the signal for this new temperature from your remote. For binary remotes (two-degree increments), you may need to manually adjust the displayed number on the ARS-2 using its UP button to match the temperature on your remote before sending the signal.

AUTO
50 F ▲
Adjust Setpoint;
Send Remote code

→ OFF / ON
Send the Lowest
Setpoint

→ AUTO
50 F
Learned

→

AUTO
51 F ▲
Adjust Setpoint;
Send Remote code

→ UP
Remote Button

→ AUTO
51 F
Learned

······
and so on

AUTO	OFF / ON	AUTO	
73 F ▲	⏻	73 F	
Adjust Setpoint; Send Remote code	Send the Lowest Setpoint	Learned	

| AUTO Setting Range 50 ~ 58 F Press ⊡ to Learn | Max 24 Setponints Reached | ● ⊡ ENTER Button | Saved Do you want to learn other mode YES NO Press △▽ select |

6. Repeat this process, increasing the temperature on your remote and sending the signal for each degree (or increment) until the highest temperature value (e.g., 73° F or 23° C) within that mode's range is reached.

Note: A total of 24 temperature setpoints are allowed across all learned modes.
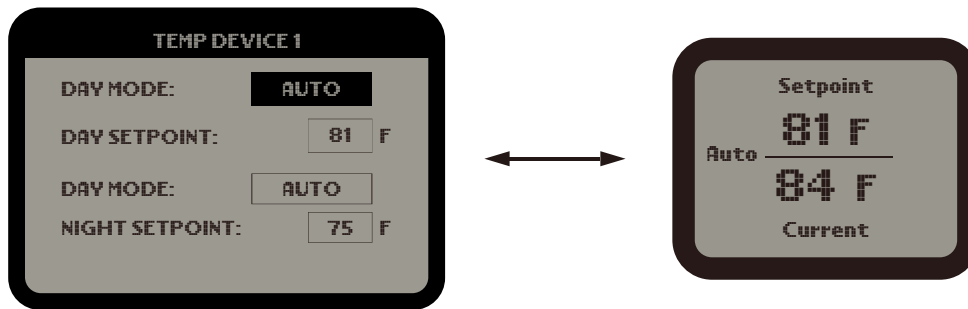
- **[Saving the Learned Codes]**
Once you have learned the temperature range for all desired modes, press the ENTER button on the ARS-2 unit to confirm and save the setting ranges. The LCD screen will display "Saved". If you do not want to save, press the BACK button.

- **[Learning Errors]**
If the ARS-2 fails to learn a remote code during the process, the LCD will show "Error" and stay at the unlearned setpoint. Adjust the remote setpoint backward and send the signal again to retry the learning process.

CONTROLLER SETTINGS

Once the ARS-2 is connected to your Hydro-X/Tent-X/Green-X controller and has learned the remote codes, it will control the AC based on the photocell & temperature sensor status with your temperature setpoint from your controller.
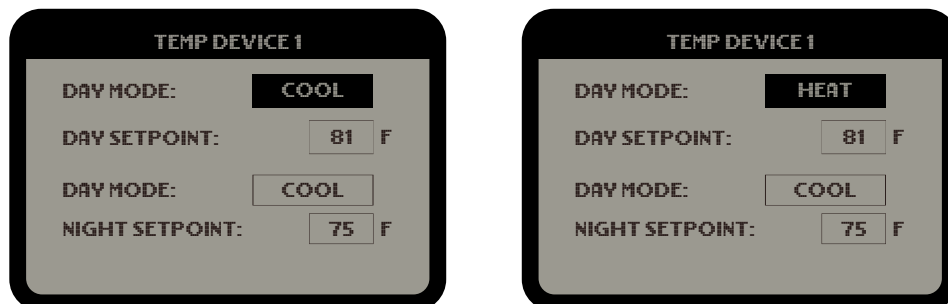
- **[AUTO Mode]**
  Under the ARS-2 settings page from your controller, when Day/Night is set to "AUTO" mode for temperature control, the ARS-2 LCD screen will display the temperature Setpoint (in the upper part) based on the Day/Night mode detected by the controller's photocell sensor. The lower part of the screen will show the current temperature (rounded up to the nearest value).
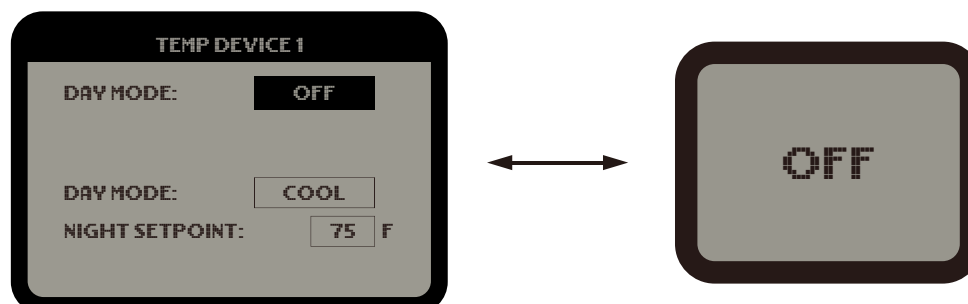
  If the current temperature goes beyond the setpoints configured in the controller, it will send work instructions to the ARS-2. The ARS-2 will then send the corresponding IR signal through the connected IR Emitter to the AC unit. The AC unit will start working (Cooling or Heating) accordingly.

  When the measured temperature reaches the Setpoint, the controller will instruct the ARS-2 to stop controlling the AC.

- **[HEAT/COOL Mode]**
  When Day/Night is set to "HEAT/COOL" mode for temperature control, the ARS-2 will then send only heat or only cool IR signal through the connected IR Emitter to the AC unit. The AC unit will start working (Cooling or Heating) accordingly.

- **[OFF Mode]**
  When Day/Night is set to "OFF" mode, the ARS-2 LCD will display "OFF" during Day/Night. In this mode, the controller will not control the AC unit.

FIRMWARE UPDATE

TrolMaster provides firmware updates for device modules like the ARS-2 to add features and fix bugs. For best performance, it's recommended to verify you have the most recent firmware version.

To update the ARS-2 firmware:

- You will need a microSD memory card with a capacity of 32GB or smaller.
- To check your current firmware version, unplug the RJ12 cable from the ARS-2 and plug it back in. The version will briefly show on the screen as it reboots.
- Go to the TrolMaster website (https://www.trolmaster.com).
- Crucially, ensure the downloaded file has the original filename. Remove any extra numbers like (1) or (2) if they were added during the download.
- Copy the correct firmware file onto your microSD card root directory.
- Insert the microSD card into the slot on the bottom of the ARS-2 module. Ensure the gold contacts are facing you.
- On the ARS-2 module, unplug the RJ12 cable.
- Press and hold the Addressing button on the ARS-2.
- While continuing to hold the Addressing button, re-insert the RJ12 cable into the module.
- The ARS-2 display should show the update screen.
- Press the Enter button (lower right button) on the ARS-2 to start the firmware update.
- The module will restart automatically when the update is complete.

SPECIFICATIONS

Degree of Ingress Protection (Indice de protection)	IP20
Input Vpltage	12V
Maximum Current	0.1A
Working Environments	Temperature: 32-122°F (0-50°C)
	Humidity: ≤90% RH
Package Dimensions	160mm(L) x 86mm(W) x 86mm(H)
Weight	0.88lbs / 0.4kg

GENERAL INFORMATION

a). Please use TrolMaster's components for better performance.

b). In the case of defects of the AC Remote Station, the AC Remote Station will either be replaced or repaired using new or reconditioned products or parts by TrolMaster within three-year warranty from the original date of purchase. For service, return the AC Remote Station in good packaging to our agent with the original sale receipt.

c). Non-professionals DO NOT open the cabinet to prevent electric shock or damage to the AC Remote Station.

WARNING: **DO NOT** allow the AC Remote Station to be exposed to water or excessive heat. DO NOT open or attempt to repair or disassemble the AC Remote Station, as there are no user-serviceable parts inside.Opening the controller will void the warranty.

1. If the surface of AC Remote Station is dirty, wipe it with a dry towel.

2. The AC Remote Station is designed for indoor use only, it should be operated under natural ventilation conditions.

3. For safety, it's necessary to connect the ground wire. If a short circuit did occur, the current would flow through the ground wire, causing a blown fuse or tripped circuit breaker.

4. The AC Remote Station should be positioned in a place that it's easily to be pull out when a fault occurs.

AVERTISSEMENT: **N'exposez PAS** le AC Remote Station à de l'eau ou à une chaleur excessive. NE l'ouvrez PAS, NE tentez PAS de le réparer ou de le démonter, car il ne contient aucune pièce réparable par l'utilisateur. L'ouverture du régulateur entraîne l'annulation de la garantie.

1. Si la surface du AC Remote Station est sale, essuyez-la à l'aide d'un chiffon sec.

2. Le AC Remote Station fonctionne sous des conditions de ventilation naturelle.

3. Pour la sécurité, il est nécessaire de connecter le fil de terre. Si un courtcircuit se produisait, le courant circulerait à travers le fil de terre, causant un fusible grillé ou un disjoncteur déclenché.

4. La AC Remote Station de l'appareil doit être placée dans un endroit où il est facile de la retirer en cas de panne.

For any issues or concerns with our products, DO NOT return them to the store. Please contact our tech support department at **support@trolmaster.com** or call **877-420-9876**.

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