



# Energy Manager

EM200

## Installation Guide



### INTRODUCTION

Halio Energy Manager stores energy and delivers the instantaneous peak power needed for fast glass tinting, then automatically scales to operating the system at low standby power levels.

### INSTALLATION WARNINGS

#### **WARNING / ATTENTION**

Read the Energy Manager Safety Guide before attempting to install this product.

*Lisez le Guide de sécurité du gestionnaire d'énergie avant de tenter d'installer ce produit.*

#### **WARNING / ATTENTION**

Install in accordance with all NEC and local electrical codes. *Installez conformément à tous les codes électriques NEC et locaux.*

#### **WARNING / ATTENTION**

Failure to turn Halio System Power Disconnect OFF before installing Halio System Power Supply is a hazardous situation that could result in death or serious injury.

*Omettre de couper l'alimentation du système Halio avant d'installer l'alimentation du système Halio est une situation dangereuse pouvant entraîner la mort ou des blessures graves.*

#### **CAUTION! / MISE EN GARDE**

To maintain compliance with FCC's RF exposure guidelines, place the product at least 20 cm (7.9 in) away from nearby persons.

*Pour rester conforme aux directives de la FCC en matière d'exposition aux radiofréquences, placez le produit à une distance minimale de 20 cm des personnes à proximité.*

#### **CAUTION! / MISE EN GARDE**

Installation should be installed only by trained Halio installers. *L'installation ne doit être installée que par des installateurs Halio qualifiés*

#### **CAUTION! / MISE EN GARDE**

Energy Manager is only for use as part of the Halio system. *Energy Manager est uniquement destiné à être utilisé avec le système Halio.*

### PREREQUISITES TO INSTALLATION

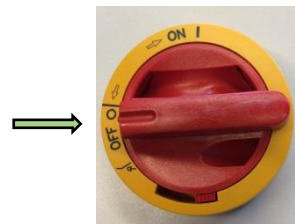
Before installing Halio Energy Manager, ensure the following prerequisites have been met.

- Halio System Power Disconnect has been installed and connected to the building's power mains.
- Halio System Power Supply has been installed and connected to Halio Power Disconnect Switch, and its 48 VDC power output cable has been routed into the Component Cabinet and remains unterminated.
- Halio Component Cabinet has been installed and connected to the outputs from the Halio System Power Supply.

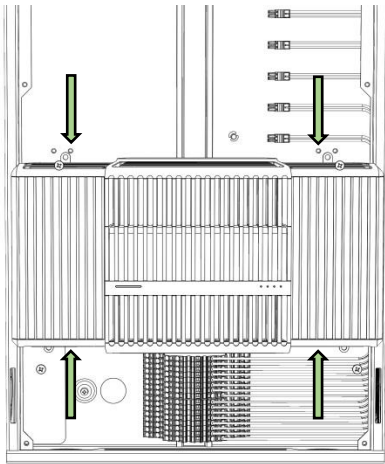
### INSTALL ENERGY MANAGER

To install Energy Manager:

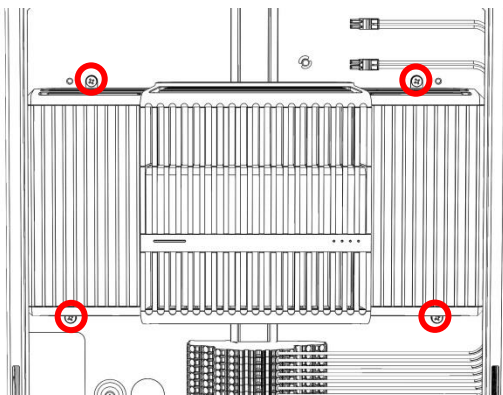
1. Turn the Halio System Power Disconnect dial for this Halio Component Cabinet to the OFF position.



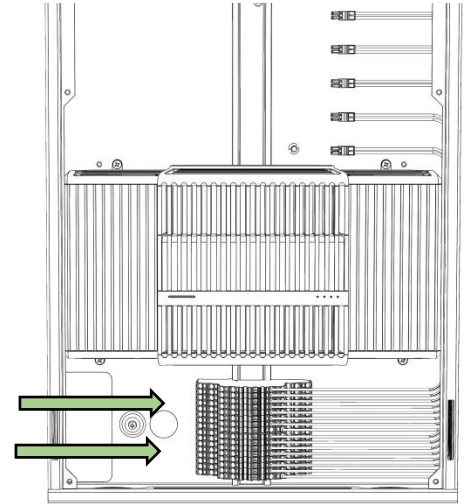
2. In the Halio Component Cabinet, center the Energy Manager over the set of 4 pre-drilled holes provided.
  - **If this is the first or only Energy Manager in this cabinet**, use the pre-drilled holes located just above the terminal block (as pictured below).
  - **If this is the second or third Energy Manager in this cabinet**, use an addition set of pre-drilled holes located higher in the cabinet.



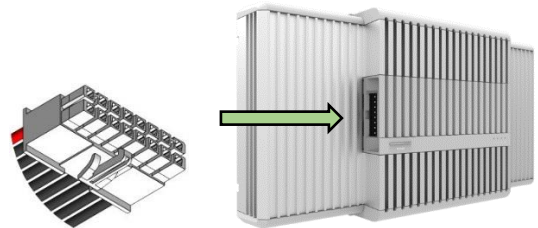
3. Use the 4 screws provided with Energy Manager to secure Energy Manager in the cabinet.



4. Wire the 8-pair unterminated wires of Energy Manager Power Output Cable to the appropriate blue (+) and gray (-) power input terminals on the left side of the Component Cabinet terminal block.



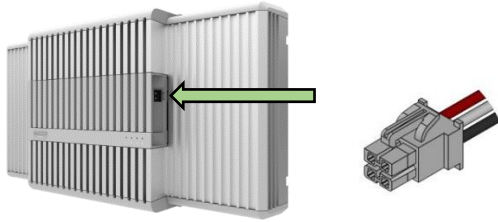
5. Plug the other end of the Energy Manager Power Output Cable (with the pre-wired 8-pair connector plug) into the power output port on the left side of Energy Manager.



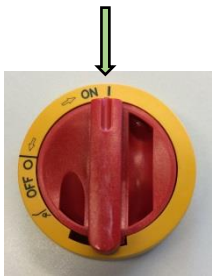
6. Locate the 4 unterminated wires of the System Power Supply Power Output Cable (routed inside the Component Cabinet), and then wire them to the 4 unterminated wires of Energy Manager Power Input Cable using the 4 lever-nuts provided. Be sure to connect them by colors: red to red, white to white, green to green, and black to black.



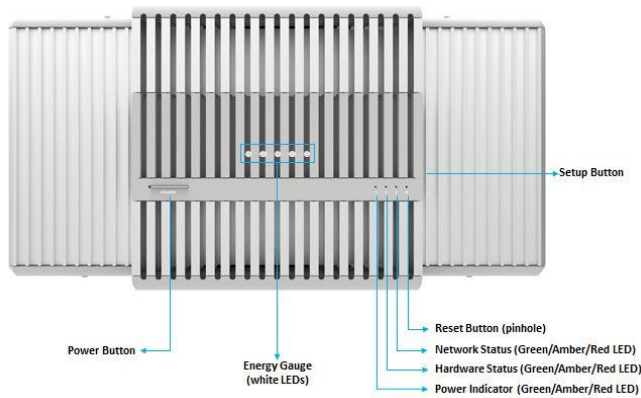
- Plug the other end of Energy Manager Power Input Cable (with the pre-wired connector plug) into the power input port on the right side of Energy Manager.



- Turn the Hali System Power Disconnect dial for the Hali Components Cabinet to the ON position.



## ENERGY MANAGER FEATURES



## CHECK HARDWARE CONNECTIONS

Check hardware connections now before moving on to ensure the equipment is working as designed: Press the Energy Manager Power button for 1 second and then verify the following LEDs light.

**Energy Gauge** – Upon first powering up Energy Manager, the Energy Gauge indicates the level of factory charge remaining. At least 1 out of 5 LEDs should light at this time.

## LED Status Key

No.	LED Purpose	Color and Status
1	Power Status	Red = Input power connected first time Orange = Exit Shipping mode to Standby mode Green = On
2	Hardware Status	Green = Installed
3	Network Status	Orange = Not Commissioned Blinking = Transitioning Green = Commissioned
4	Reset Pinhole	---

## COMMISSION ENERGY MANAGER

Energy Manager must be added to the Hali thread network to communicate with other Hali devices. This requires using Hali Installer App to virtually install this Energy Manager and to commission it in the Hali network.

To commission Energy Manager:

- Ensure LED 1 is Green. If not, press Power button for 1 second and observe color change to Green.
- Check the status of all LEDs:

**Energy Gauge** - The more white LEDs that are lit, then the higher the percentage of battery charged. Any percentage of charge is acceptable at this point.

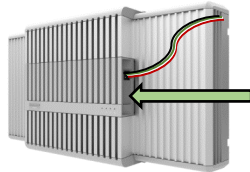
White LEDs Lit	% of Battery Charge
*	20% charge
**	40% charge
***	60% charge
****	80% charge
*****	100% charge

**LED Status** - At this point in the setup process, each numbered LED should display as listed below.

No.	LED Purpose	Color and Status
1	Power Status	Green = On
2	Hardware Status	Green = Installed
3	Network Status	Orange = Not Commissioned
4	Reset Pinhole	---

- In the Installers App Home screen, choose Cabinet Electronics.
- At the physical Components Cabinet where this Energy Manager now resides, scan the cabinet's barcode. A virtual cabinet unique to the barcode is displayed in the app with status icons for each device.

5. In the virtual cabinet, press the plus sign (+) next to the bottom open slot reserved for Energy Manager. This begins the virtual Energy Manager installation.
6. Follow the in-app instructions to finish the virtual installation and commission this Energy Manager. When prompted to do so:
  - a. Scan the barcode on the side of the installed Energy Manager.
  - b. Press the Setup button firmly. (The Setup button is the depression on the right side of Energy Manager.)
  - c. Ensure the Network Status LED (#3) changes to Solid Green to indicate Energy Manager has been identified on the network.



- Ensure System Power Disconnect switch is set to ON position.
- Use a multimeter to ensure 48V DC is being delivered.

*Issue B: The Energy Gauge on my Energy Manager is down to 20% and window tinting seems to be slow.*

**Possible Solution:** If you just experienced a power outage or heavy usage of manual tinting, then the Energy Manager is operating as designed; Response time has been temporarily slowed down to conserve energy. The battery will soon recover and will return to the normal 80-100% operating range on its own.

## USE ENERGY MANAGER

**Energy Gauge** – Indicates current percentage of battery charge. Normal standby mode is 80-100 %. The charge will drop periodically during heavy demand periods, and then recharge automatically once demand has subsided.

White LED Lit	% of Battery Charge
*	20% charge
**	40% charge
***	60% charge
****	80% charge
*****	100% charge

**LED Status Key** – During normal standby mode, the status of LEDs 1-3 will be a steady Green. If any other color or blinking occurs, then troubleshoot the issue as needed.

No.	LED Purpose	Color and Status
1	Power Status	Green = On
2	Hardware Status	Green = Installed
3	Network Status	Green Blinking = Transitioning Green Steady = Commissioned
4	Reset Pinhole	---

## TROUBLESHOOTING

*Issue A: My Energy Manager doesn't power on.*

Possible Solutions:

- Ensure power button is pressed for 1 second to toggle from OFF to ON.
- Check all wiring connections to ensure proper contacts.

EM200IG-1900805

## REGULATORY COMPLIANCE



FCC ID No. 2AJXY-EM200

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Note that changes or modifications not expressly approved by Kinestral Technologies could void the user's authority to operate the equipment.



IC: 22717-EM200

This device complies with Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.