

# EG4<sup>®</sup> WALLMOUNT 314Ah INDOOR BATTERY

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## QUICK START GUIDE



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## 1. TECHNICAL SPECIFICATIONS

| TYPE & MODEL #                        |                                                                       |
|---------------------------------------|-----------------------------------------------------------------------|
| PARAMETER                             | SPECIFICATION                                                         |
| PRODUCT TYPE                          | Low Voltage LFP Battery                                               |
| BATTERY TYPE                          | Lithium Iron Phosphate (LFP)                                          |
| MODEL NUMBER                          | WM-48-314-IN-XX (XX is a number between 00 – 99)                      |
| ELECTRICAL CHARACTERISTICS            |                                                                       |
| NOMINAL ENERGY CAPACITY               | 16kWh                                                                 |
| USABLE ENERGY (80%)                   | 12.86kWh (80% recommended)                                            |
| VOLTAGE RANGE                         | 47.5 – 57.6 VDC                                                       |
| NOMINAL VOLTAGE                       | 51.2 VDC                                                              |
| CAPACITY                              | 314Ah                                                                 |
| CHARGING VOLTAGE RANGE                | 56 – 57 VDC                                                           |
| DISCHARGING CUT-OFF VOLTAGE           | 47.5 VDC                                                              |
| MAX CONTINUOUS CHARGE CURRENT         | 157A                                                                  |
| MAX CONTINUOUS DISCHARGE CURRENT      | 200A                                                                  |
| CONTINUOUS CHARGE/DISCHARGE POWER     | 8/10.2 kW                                                             |
| RECOMMENDED CHARGING/DISCHARGING RATE | 0.5C                                                                  |
| PEAK POWER                            | 12.8kW (3 sec)                                                        |
| ROUND-TRIP EFFICIENCY                 | 95%                                                                   |
| MAX PARALLEL UNITS                    | 16                                                                    |
| PROTECTION FEATURES                   | Over/Under Voltage, Over-Current, Short Circuit, High/Low Temp        |
| BATTERY MANAGEMENT SYSTEM (BMS)       | Integrated, Active Balancing                                          |
| COMMUNICATION PROTOCOLS               | RS485, CAN                                                            |
| BATTERY BREAKER                       | 250A                                                                  |
| ENVIRONMENTAL SPECIFICATIONS          |                                                                       |
| STORAGE TEMPERATURE RANGE**           | -4 – 131°F (-20 – 55°C)                                               |
| HUMIDITY RANGE                        | 5% – 95% RH (non-condensing)                                          |
| ALTITUDE                              | 9843 ft. (<3000 m)                                                    |
| COOLING METHOD                        | Natural Convection                                                    |
| DIMENSIONS [H × W × D]                | 34.1 in. × 18.1 in. × 9.6 in. (865 mm × 460 mm × 245 mm)              |
| OPERATING TEMPERATURE RANGE           | Charge: 32 – 122°F (0 – 50°C)<br>Discharging: -4 – 131°F (-20 – 55°C) |

\*EG4 recommends this value be set no lower than 20% to maintain the recommended 80% Depth of Discharge.

\*\*Less than 3 months of storage. If longer than 3 months, recommended storage temperature will be 59°F – 86°F (15°C - 30°C). Refer to section 5.4 for complete storage requirements.

| MECHANICAL SPECIFICATIONS       |                                                                 |
|---------------------------------|-----------------------------------------------------------------|
| PARAMETER                       | SPECIFICATION                                                   |
| WEIGHT                          | 293.2 lbs. (133 kg)                                             |
| ENCLOSURE RATING                | IP20                                                            |
| MOUNTING OPTIONS                | Wall/Floor mount                                                |
| DISPLAY/INDICATORS              | LED Status                                                      |
| CONNECTOR TYPE                  | Degson quick connector/screw terminal                           |
| CERTIFICATIONS & COMPLIANCE     |                                                                 |
| UL 1973                         | Yes                                                             |
| UL 9540                         | DC ESS, AC ESS with EG4 18kPV, 12kPV, FlexBOSS 21, FlexBOSS 18* |
| UL 9540A                        | Batt to Batt spacing of 6 in.                                   |
| UN 38.3                         | Yes                                                             |
| FCC PART 15 (EMC)               | Pending                                                         |
| PROTECTION CLASS                | Class B                                                         |
| WARRANTY & LIFECYCLE            |                                                                 |
| CYCLE LIFE (70% EOL CAPACITY)** | 10000 cycles @ 0.5C, 25°C, 80% DOD                              |
| DESIGN LIFE***                  | 10 years                                                        |
| WARRANTY                        | 10 years or 10000 cycles                                        |
| APPLICATION TYPE                | Residential/Commercial/Off-grid/Backup                          |

\*AC ESS certification with FlexBOSS 18 is pending.

\*\*EG4 recommends this value be set no lower than 20% to maintain the recommended 80% Depth of Discharge.

\*\*\* $(51.2V \times 314Ah / 1000 \times 80\% \times 10000 / 1000) 90\% = 115.7 \text{ MWh}$  or  
 $(12861 \text{ kWh} \times 10000 \text{ cycles} \times 90\% \text{ efficiency}) = 115.7 \text{ MWh}$

## **2. ABBREVIATIONS**

- AWG – American Wire Gauge
- A – Amps
- Ah – Amp hour(s)
- AC – Alternating Current
- AFCI – Arc-Fault Circuit Interrupter
- AHJ – Authority Having Jurisdiction
- kAIC – kilo-Amp Interrupting Capability
- ANSI – American National Standards Institute
- BAT – Battery
- BMS – Battery Management System
- COM – Communication
- CT – Current Transformer
- DC – Direct Current
- DIP – Dual In-line Package
- DOD – Depth of Discharge
- EG – Equipment Ground
- EGS – Equipment Grounding System
- EMC – Electromagnetic Compatibility
- EPS – Emergency Power System
- ESS – Energy Storage System
- E-Stop – Emergency Stop
- FCC – Federal Communication Commission
- GE – Grounding Electrode
- GEC – Grounding Electrode Conductor
- GFCI – Ground Fault Circuit Interrupter
- GFDI – Ground Fault Detector/Interrupter
- Imp – Maximum Power Point Current
- IEEE – Institute of Electrical and Electronic Engineers
- IP – Ingress Protection
- Isc – Short-Circuit Current
- In-lbs. – Inch Pounds
- kW – Kilowatt
- kWh – Kilowatt-hour
- LCD – Liquid Crystal Display
- LFP – Lithium Iron Phosphate
- L1 – Line 1
- L2 – Line 2
- mm – Millimeters
- MPPT – Maximum Power Point Tracking
- mV – Millivolt
- N – Neutral
- NEC – National Electric Code
- NEMA – National Electrical Manufacturers Association
- NFPA – National Fire Prevention Association
- Nm – Newton Meters
- NOCT – Normal Operating Cell Temperature
- PC – Personal Computer
- PCB – Printed Circuit Board
- PE – Protective Earth
- PPE – Personal Protective Equipment
- PV – Photovoltaic
- RSD – Rapid Shut Down
- SCC – Standards Council of Canada
- SOC – State of Charge
- STC – Standard Testing Conditions
- UL – Underwriters Laboratories
- UPS – Uninterrupted Power Supply
- V – Volts
- VOC – Open-Circuit Voltage
- VMP – Voltage Maximum Power

### 3. BATTERY SAFETY

#### 3.1 SAFETY INSTRUCTIONS

Before any work begins, carefully read all safety instructions, and always observe them when working on or with the battery. The installation must follow all applicable national or local standards and regulations. Consult with the local AHJ and/or utility to obtain the proper permits and permissions before installation.

**Incorrect installation may cause:**

- *Injury or death to the installer, operator or third party*
- *Damage to the battery or other attached equipment*

#### 3.2 IMPORTANT SAFETY NOTIFICATIONS



#### **DANGER: HAZARDOUS VOLTAGE CIRCUITS!**

There are various safety concerns that must be carefully observed before, during, and after the installation, as well as during future operation and maintenance. The following are important safety notifications for the installer and any end users of this product under normal operating conditions.

1. **Do not disassemble the battery.** Contact the distributor for any issues that need repair for more information and proper handling instructions. Incorrect servicing or re-assembly may result in a risk of electric shock or fire and void the warranty.
2. **Never short-circuit DC inputs.** Short-circuiting the battery may result in a risk of electric shock or fire and can lead to severe injury or death and/or permanent damage to the unit and/or any connected equipment.
3. **Use caution when working with metal tools on or around batteries and systems.** **Risk** of electrical arcs and/or short circuiting of equipment can lead to severe injury or death and equipment damage.
4. **Beware of high battery current.** Ensure that the battery module breakers and/or on/off switches are in the “open” or “off” position before installing or working on the battery. Use a voltmeter to confirm there is no voltage present to avoid electric shock.
5. **Do not make any connections or disconnections to the system while the batteries are operating.** Damage to system components or risk of electrical shock may occur if working with energized batteries.
6. Make sure the battery bank is properly grounded.
7. An installer should make sure to be well protected by reasonable and professional insulative equipment [e.g., personal protective equipment (PPE)].
8. Before installing, operating, or maintaining the system, it is important to inspect all existing wiring to ensure it meets the appropriate specifications and conditions for use.
9. Ensure that the battery and system component connections are secure and proper to prevent damage or injuries caused by improper installation.



## **WARNING: TO REDUCE THE RISK OF INJURY, READ ALL INSTRUCTIONS!**

All work on this product (system design, installation, operation, setting, configuration, and maintenance) must be carried out by qualified personnel. To reduce the risk of electric shock, do not perform any servicing other than those specified in the operating instructions unless qualified to do so.

10. Read all instructions before commencing installation. For electrical work, follow all local and national wiring standards, regulations, and these installation instructions. All wiring should be in accordance with the National Electrical Code (NEC), ANSI/NFPA 70.
11. The battery and system can connect with the utility grid only if the utility provider permits. Consult with the local AHJ before installing this product for any additional regulations and requirements for the area.
12. All warning labels and nameplates on this battery should be clearly visible and must not be removed or covered.
13. The installer should consider the safety of future users when choosing the battery's correct position and location as specified in this manual.
14. Keep children away from touching or misusing the battery and relevant systems.

The battery is designed to stop charging when reaching the low threshold of 32°F. If charging current is observed when the internal battery temperature is below 32°F, disconnect battery immediately and consult the distributor.



## **WARNING!**

**Cancer and Reproductive Harm – See [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov) for more details.**

## **DISCLAIMER**

EG4 reserves the right to make changes to the material herein at any time without notice.

Please refer to [www.eg4electronics.com](http://www.eg4electronics.com) for the most updated version of our manuals/spec sheets.

## 4. SÉCURITÉ DE LA BATTERIE

### 4.1 CONSIGNES DE SÉCURITÉ

Avant de commencer tout travail, lisez attentivement toutes les consignes de sécurité et respectez-les toujours lorsque vous travaillez sur ou avec la batterie. L'installation doit être conforme à toutes les normes et réglementations nationales ou locales applicables. Consultez l'autorité compétente locale et/ou le service public pour obtenir les permis et les autorisations appropriés avant l'installation.

**Une installation incorrecte peut entraîner les effets suivants :**

- *Blessure ou décès de l'installateur, de l'exploitant ou d'un tiers*
- *Domages à la batterie ou à tout autre équipement attaché*

### 4.2 NOTIFICATIONS DE SÉCURITÉ IMPORTANTES



#### **DANGER: CIRCUITS À HAUTE TENSION!**

Il existe divers problèmes de sécurité qui doivent être soigneusement observés avant, pendant et après l'installation, ainsi que lors de l'utilisation et de la maintenance futures. Ce qui suit sont des notifications de sécurité importantes pour l'installateur et tout utilisateur final de ce produit dans des conditions de fonctionnement normales.

1. **Ne démontez pas la batterie.** Contactez le distributeur pour tout problème nécessitant une réparation pour plus d'informations et des instructions de manipulation appropriées. Un entretien ou un remontage incorrect peut entraîner un risque d'électrocution ou d'incendie et annuler la garantie.
2. **Ne court-circuitez jamais les entrées CC.** Un court-circuit de la batterie peut entraîner un risque d'électrocution ou d'incendie et peut entraîner des blessures graves ou la mort et/ou des dommages permanents à l'appareil et/ou à tout équipement connecté.
3. **Soyez prudent lorsque vous travaillez avec des outils métalliques sur ou à proximité des batteries et des systèmes.** Le risque d'arcs électriques et/ou de court-circuit de l'équipement peut entraîner des blessures graves ou la mort et des dommages à l'équipement.
4. **Attention au courant de batterie élevé.** Assurez-vous que les disjoncteurs du module de batterie et/ou les interrupteurs marche/arrêt sont en position « ouvert » ou « arrêt » avant d'installer ou de travailler sur la batterie. Utilisez un voltmètre pour confirmer qu'il n'y a pas de tension présente afin d'éviter les chocs électriques.
5. **N'effectuez aucune connexion ou déconnexion du système pendant que les batteries fonctionnent.** Des dommages aux composants du système ou un risque d'électrocution peuvent survenir si vous travaillez avec des batteries sous tension.
6. Assurez-vous que le banc de batteries est correctement mis à la terre.
7. Un installateur doit s'assurer d'être bien protégé par un équipement isolant raisonnable et professionnel [par exemple, un équipement de protection individuelle (EPI)].
8. Avant d'installer, d'utiliser ou d'entretenir le système, il est important d'inspecter tout le câblage existant pour s'assurer qu'il répond aux spécifications et aux conditions d'utilisation appropriées.
9. Assurez-vous que les connexions de la batterie et des composants du système sont sécurisées et appropriées pour éviter les dommages ou les blessures causés par une mauvaise installation.



## **AVERTISSEMENT : POUR RÉDUIRE LE RISQUE DE BLESSURE, LISEZ TOUTES LES INSTRUCTIONS !**

Tous les travaux sur ce produit (conception du système, installation, fonctionnement, réglage, configuration et maintenance) doivent être effectués par du personnel qualifié. Pour réduire le risque d'électrocution, n'effectuez aucun entretien autre que ceux spécifiés dans le mode d'emploi, à moins d'être qualifié pour le faire.

10. Lisez toutes les instructions avant de commencer l'installation. Pour les travaux électriques, suivez toutes les normes de câblage locales et nationales, les réglementations et ces instructions d'installation. Tout le câblage doit être conforme au Code national de l'électricité (NEC), ANSI/NFPA 70.
11. La batterie et le système ne peuvent se connecter au réseau public que si le fournisseur d'électricité l'autorise. Consultez l'AHJ local avant d'installer ce produit pour connaître les réglementations et exigences supplémentaires de la région.
12. Toutes les étiquettes d'avertissement et les plaques signalétiques de cette batterie doivent être clairement visibles et ne doivent pas être retirées ou couvertes.
13. L'installateur doit tenir compte de la sécurité des futurs utilisateurs lors du choix de la position et de l'emplacement corrects de la batterie, comme spécifié dans ce manuel.
14. Tenez les enfants à l'écart de la batterie et des systèmes concernés ou de les utiliser à mauvais escient.

La batterie est conçue pour arrêter de se charger lorsqu'elle atteint le seuil bas de 32 °F. Si un courant de charge est observé lorsque la température interne de la batterie est inférieure à 32 °F, débranchez immédiatement la batterie et consultez le distributeur.



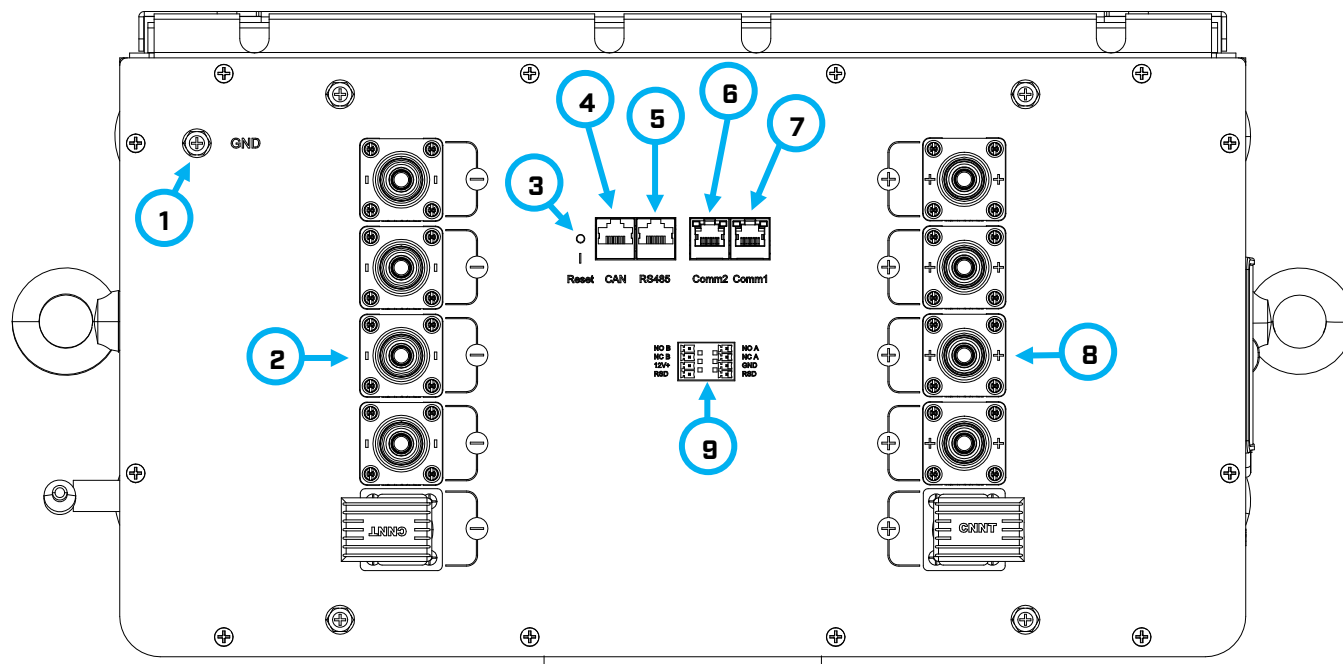
**Cancer et troubles de la reproduction – Voir [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov) pour plus de détails.**

### **DISCLAIMER**

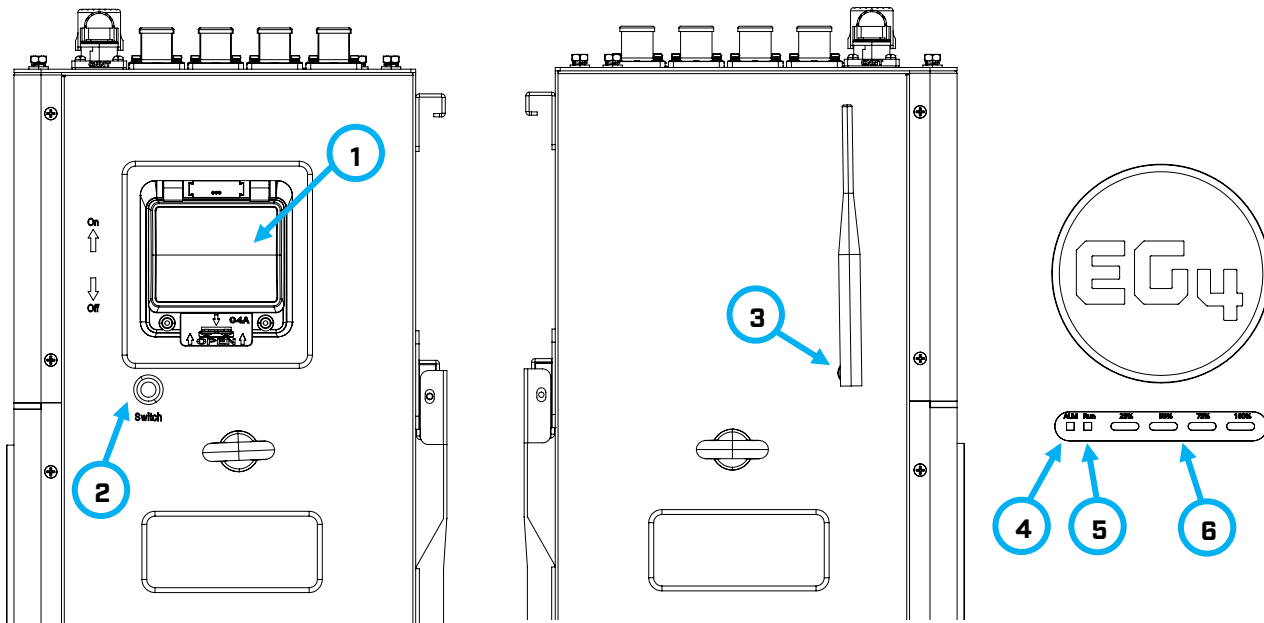
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## 5. PRODUCT OVERVIEW

The EG4® WallMount 314Ah Indoor Battery is ideal for low voltage residential indoor energy storage applications. The batteries use lithium iron phosphate cells with the highest safety performance and an intelligent Battery Management System (BMS) that can monitor and record the voltage, current, and temperature of each cell in real-time. The BMS also contains additional features and protections such as passive cell balancing, advanced battery control methods, additional safety features, and more.

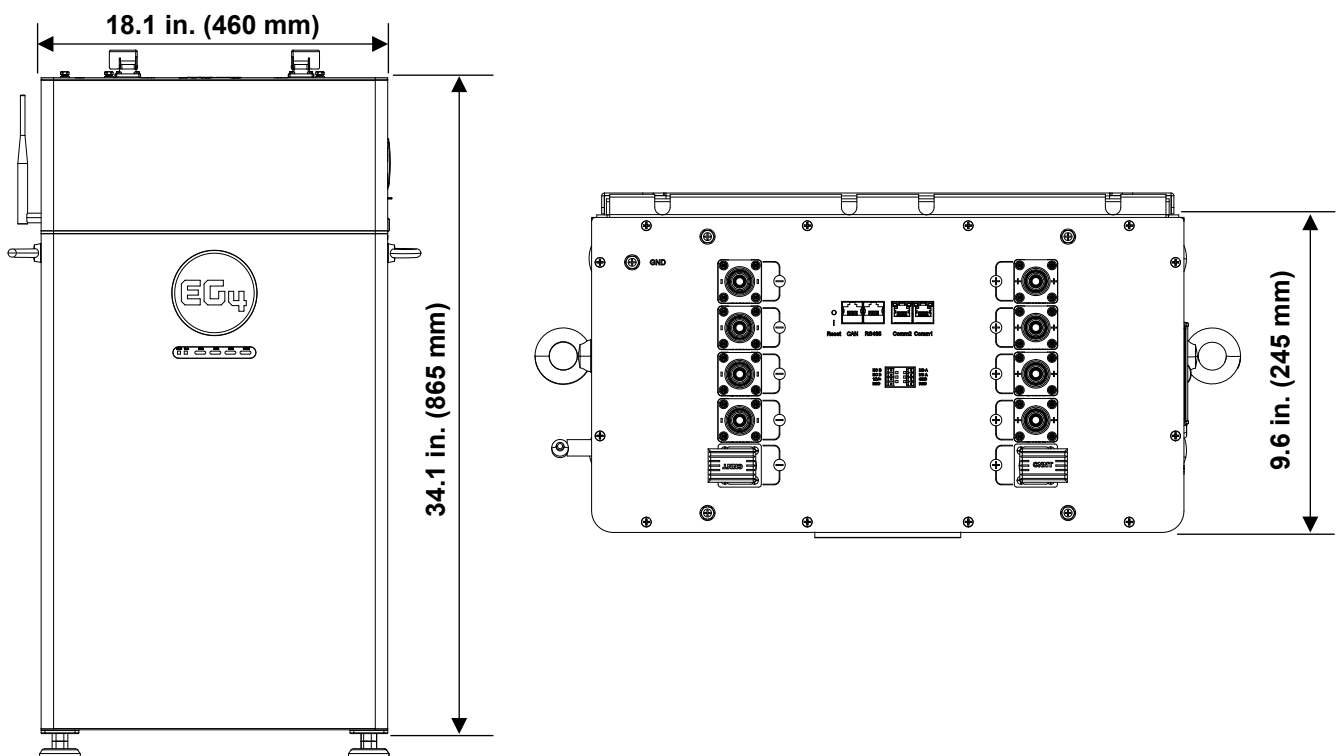


| NO. | ITEM           | DESCRIPTION                                      | REMARKS                             |
|-----|----------------|--------------------------------------------------|-------------------------------------|
| 1   | GND            | Equipment Grounding Conductor (EGC)              | For grounding the battery           |
| 2   | Terminal       | Negative × 5                                     | 250A rated Degson battery connector |
| 3   | Reset          | BMS Reset Button                                 | -                                   |
| 4   | CAN            | CAN Communication Interface                      | For inverter communications         |
| 5   | RS485          | RS485 Communication Interface                    | For inverter communications         |
| 6   | Battery Comm 2 | Battery communication Paralleling                | For multiple batteries in parallel  |
| 7   | Battery Comm 1 | Battery communication Paralleling                | For multiple batteries in parallel  |
| 8   | Terminal       | Positive × 5                                     | 250A rated Degson battery connector |
| 9   | Dry Contact    | Normally Closed, Normally Open, Ground, RSD, 12V | For RSD and Generator control       |



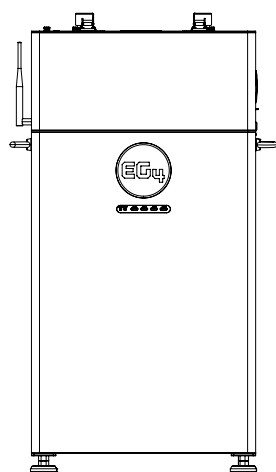
| NO. | ITEM          | DESCRIPTION                               | REMARKS                                           |
|-----|---------------|-------------------------------------------|---------------------------------------------------|
| 1   | Breaker       | Output switch and over current protection | -                                                 |
| 2   | ON/OFF Switch | Turn BMS on/off                           | -                                                 |
| 3   | Wi-Fi Dongle  | Network Connection                        | -                                                 |
| 4   | ALM           | Alarm LED Display                         | To show alarm status                              |
| 5   | RUN           | Run LED Display                           | To show normal operating status                   |
| 6   | SOC           | State Of Charge Display                   | To show battery charge.<br>Each LED indicates 25% |

## 5.1 BATTERY DIMENSIONS

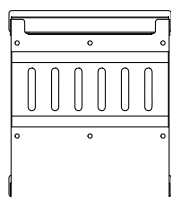


## 5.2 PACKING LIST

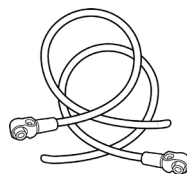
The items listed below will arrive with the product shipment:



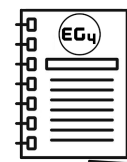
EG4 WallMount 314Ah  
Indoor Battery (x1)



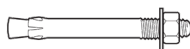
Mounting Bracket (x1)  
(Will come attached to  
the back of the battery)



Red and Black Degson power  
cables (2 set each)  
2/0 AWG (39.4 in.)



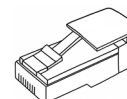
User Manual



Expansion Bolt (x6)  
M8\*70



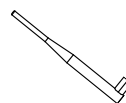
Battery to Inverter  
Communication Cable (x1)  
(59.1 in.)



120Ω Terminating  
Resistor



M10 Lifting  
Eye Bolt (x2)



Wi-Fi Antenna



X-Bracket



### DANGER:

When installing or removing the battery, confirm the battery is powered off and use a multimeter to confirm there is no voltage present. This will prevent users from encountering live (powered) terminals by accident.

## 5.3 BMS OVERVIEW

The Battery Management System (BMS) is intended to safeguard the battery and battery cells against a variety of situations that could damage or destroy system components. The BMS utilizes a 200A rated charge/discharge limit which also aids in keeping the battery and battery cells operational for a greater number of life cycles. Each EG4® WallMount 314Ah Indoor Battery is specifically configured to ensure peak performance and operation with any system.

### PCB TEMPERATURE PROTECTION

The BMS will ensure that the Printed Circuit Board (PCB) does not overheat. This component houses most of the “brains” of the battery. This feature will turn off the battery if it begins to overheat.

### VOLTAGE PROTECTION

The BMS is designed to continuously monitor the voltage of each individual cell and ensure that they are not over or undercharged.

### CELL BALANCE PROTECTION

Cell balancing ensures that each individual cell within the battery maintains a specific voltage range relative to the others. This process is essential for optimizing the battery's performance and longevity. This is performed automatically, without the need for manual intervention.

## ENVIRONMENTAL TEMPERATURE PROTECTION

It may be dangerous to attempt using the battery in temperatures outside of the environmental parameters provided on the spec sheet. Continued operation in these conditions may result in permanent damage to the battery module and its components. To prevent this, the BMS is designed to measure the temperature while charging/discharging and will shut down the battery to prevent damage. See section 5.4 for more information.

## CURRENT PROTECTION

The BMS is designed to constantly monitor the charge/discharge amperage and has built in safeguards against exceeding specific parameters. These include built-in timers that shut off quickly in the event of short circuits or extremely high amperage and delayed shut down for amperage that is slightly above the maximum capacity.

## 5.4 STORAGE INFORMATION

There are a few steps to be taken to ensure that batteries are stored safely and in a state that will ensure they are not damaged during storage.

### BATTERY STATE

The State of Charge (SOC) of the battery when placed into storage will affect how long the battery maintains its SOC. EG4® recommends that each battery is brought to a 20 – 50% SOC before placing it in storage. Lithium batteries will lose a certain percentage of their total charge while in storage, depending on how long they are stored and the conditions they are stored in. EG4 recommends charging/discharging the batteries every 3 months for best performance.

### ENVIRONMENTAL FACTORS

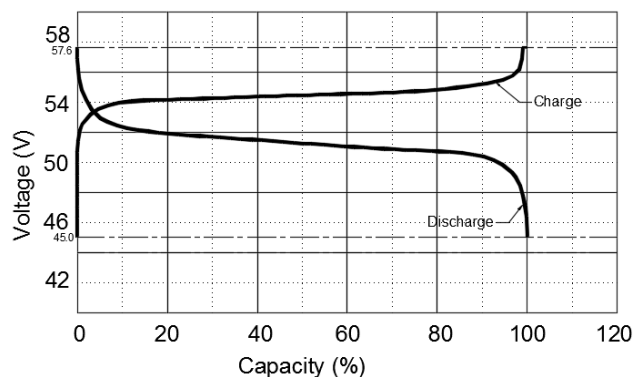
The storage location for the battery can greatly affect the health of the battery. **For best results**, the temperature should remain moderate, between 32°F – 113°F (0°C – 45°C) up to three months. If stored longer than three months, the recommended temperature range is 59°F – 86°F (15°C – 30°C).

If storage time of the cell exceeds 6 months, the SOC of the cell needs to be adjusted to 20 – 50% SOC by a charge and discharge process, humidity is less than or equal to 90% RH, and the recommended storage temperature is 41°F – 77°F (5°C – 25°C).

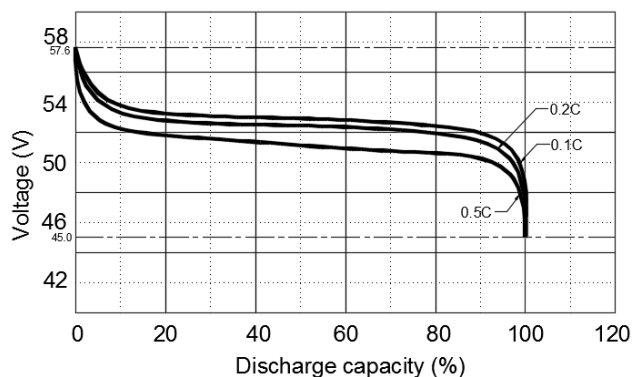
Keep the battery away from locations where it may get wet or locations with high humidity (≥90%).  
**Store the batteries away from combustible materials!**

## 5.5 BATTERY PERFORMANCE CURVES

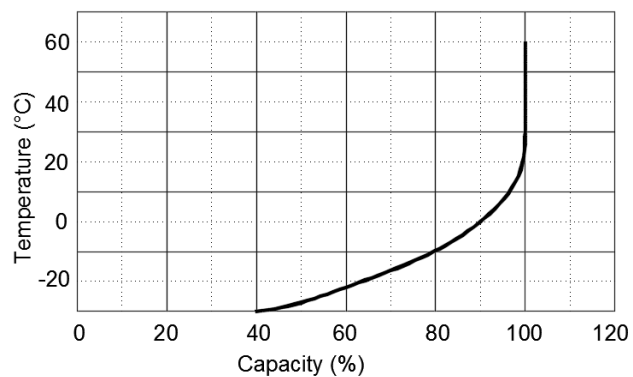
Charge & Discharge curve with 0.5C @ 25°C



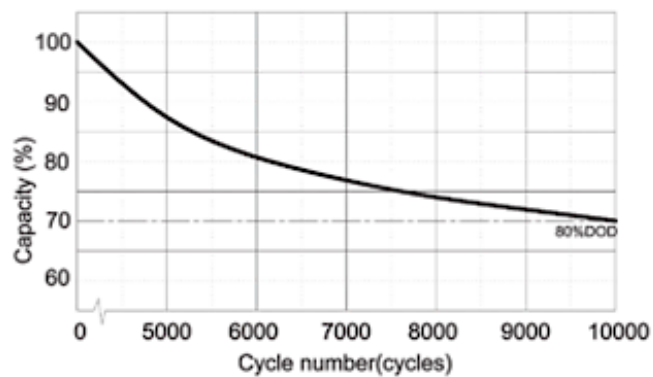
Discharge performance with different rate @ 25°C



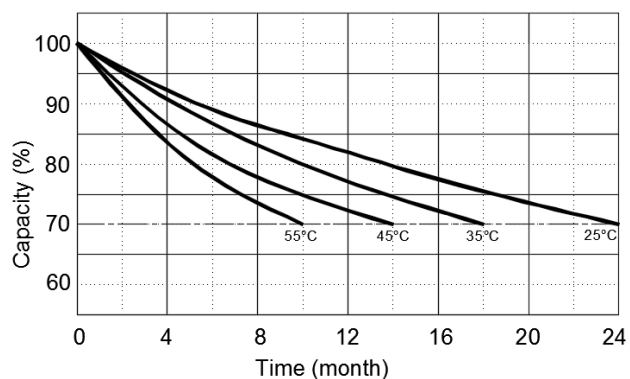
Discharge capacity with different temperature @ 0.5C



Cycle life with DOD @ 0.5C, 25°C



Self-discharge @ different temperature



## 5.6 BATTERY CHARGING

Ensure the proper settings are set on the charge controller and/or inverter being used to avoid overcharging or damaging the module. (Refer to Section 1: Technical Specifications for a full list of charging/discharging parameters.)

It is normal for EG4® WallMount 314Ah Indoor batteries that have their own BMS and are wired in parallel to demonstrate a wide variety of SOC readings during any given charge or discharge cycle. Variations of up to 10% are common. For more information on Battery State of Health (SOH) & Depth of Discharge (DoD), scan the QR code below:



This is not a cause for concern or indication that the module is providing less than the maximum capacity. This can be caused by even slight variations in wiring resistance to each battery, internal resistance, temperature differences, and even variations in each cell. Even a slight variation causes one battery to take more of the load or charge for a short time. Over the duration of the discharge or charge cycle, this will balance out with the lagging battery then taking the load or charge at the other end of the cycle resulting in recovering the full listed kWh capacity of the pack. The voltage differences created as batteries diverge in SOC will eventually cause them to converge at some point in the cycle.



### NOTE:

When installing multiple batteries or adding a battery to an existing bank, confirm all batteries are charged to 100% before paralleling. This step is crucial to optimizing battery performance.

## 6. GENERAL INSTALLATION

This section provides detailed steps for installing and configuring the battery. It is recommended to complete each section in order as listed below:

### INSTALLATION STEPS

- 6.1 Recommended Tools
- 6.2 Location Requirements
- 6.3 Battery Installation
- 6.4 Battery and Conduit Box
- 6.5 Battery and Conduit Box with EG4 18kPV inverter
- 6.6 Battery and Conduit Box with EG4 12kPV, and FlexBOSS18 & 21 inverters

### 6.1 RECOMMENDED TOOLS



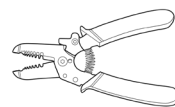
Safety Goggles



Dielectric Shoes



Gloves



Wire Stripper



Multimeter



Phillips Head  
Screwdriver



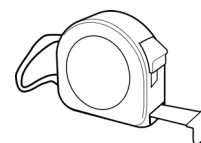
Socket Set



Electric Drill and  
Drill Bits



Flathead  
Screwdriver



Tape Measure

### 6.2 LOCATION REQUIREMENTS

Requirements for installation location:

- The EG4® WallMount 314Ah Indoor Battery is heavy. Use an equipment lift or the team-lift technique to move the battery.
- When installing on flat ground, ensure there is proper drainage on the ground surrounding the install location to help prevent potential damage from flooding. When installing against a wall, ensure at least a 6 in. (152 mm) gap on each side of the unit for adequate airflow and operations.
- The minimum volume of installation room is 50m<sup>3</sup> without ventilation.
- Ensure the battery is installed upright.



#### NOTE:

The battery is very heavy. Use the team-lift technique during installation.

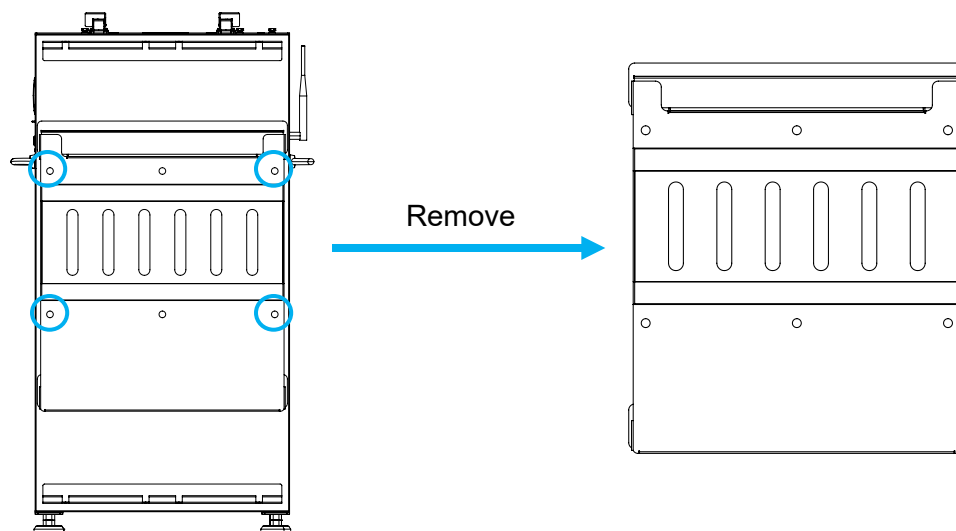


#### WARNING:

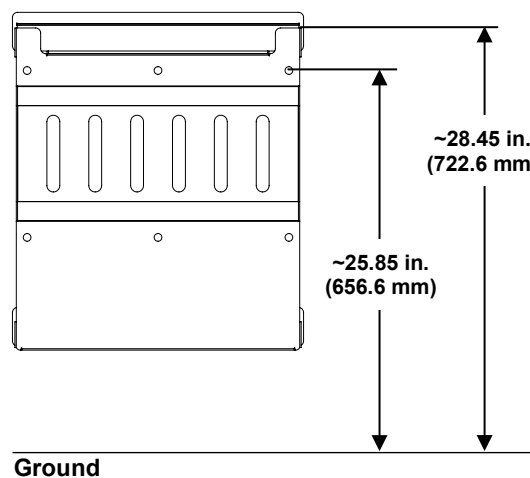
Do not make any electrical connections until the battery is in its final location.

## 6.3 BATTERY INSTALLATION

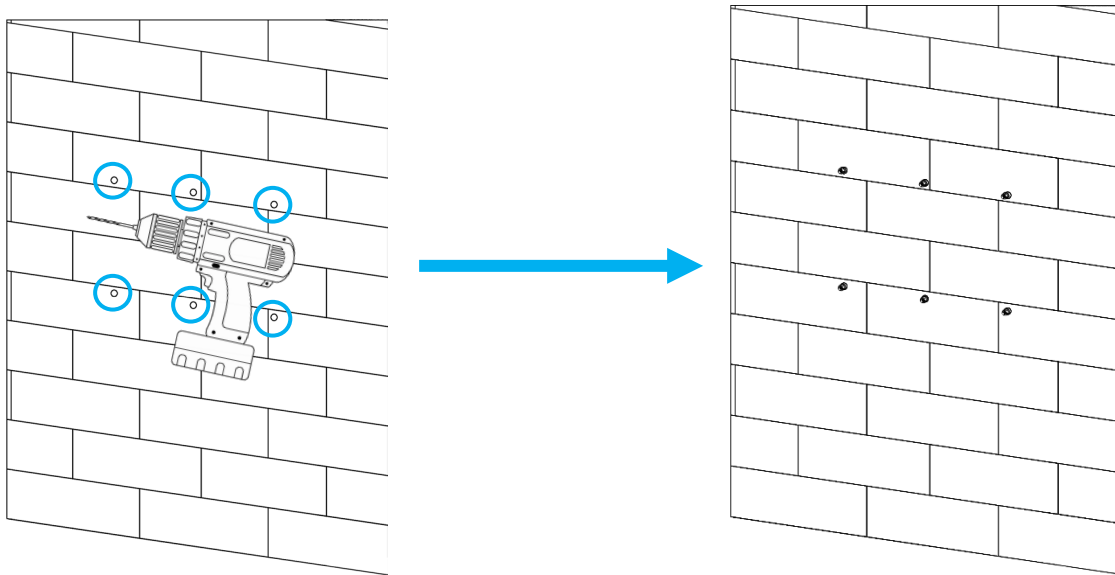
1. Remove the four set screws holding the mounting bracket to the back of the battery and set them to the side.
2. Remove the mounting bracket from the battery and set it to the side.



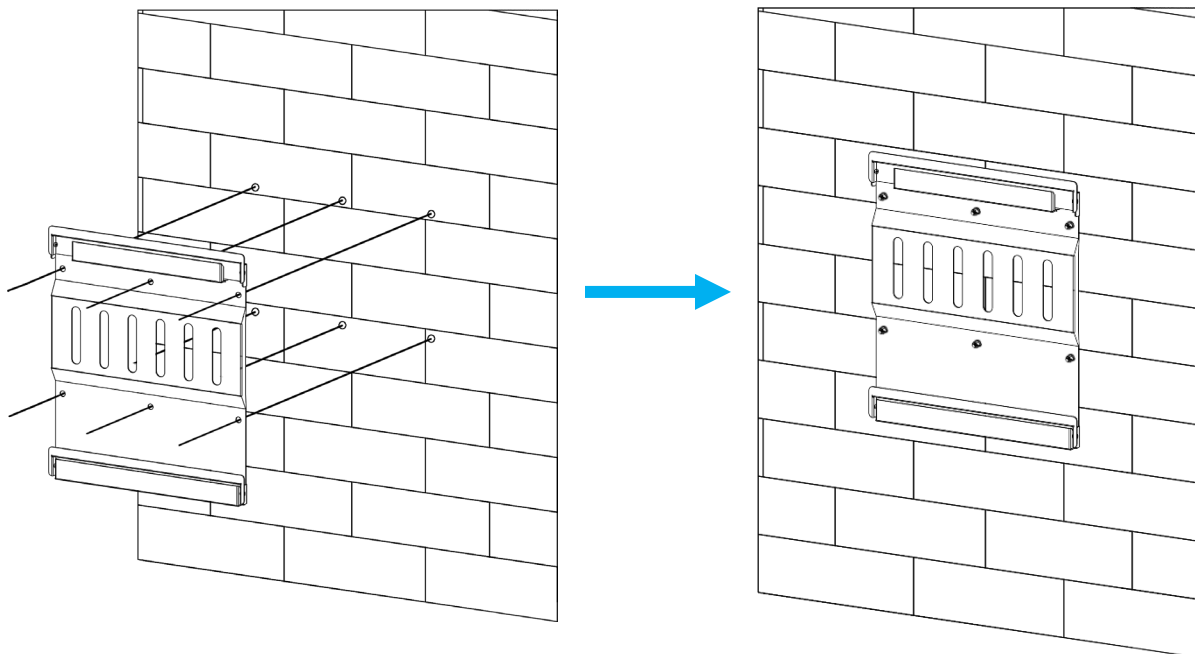
3. Position the top of the mounting bracket on the wall at the desired mounting height, with a minimum clearance from the ground of 28.45 in. (722.6 mm).



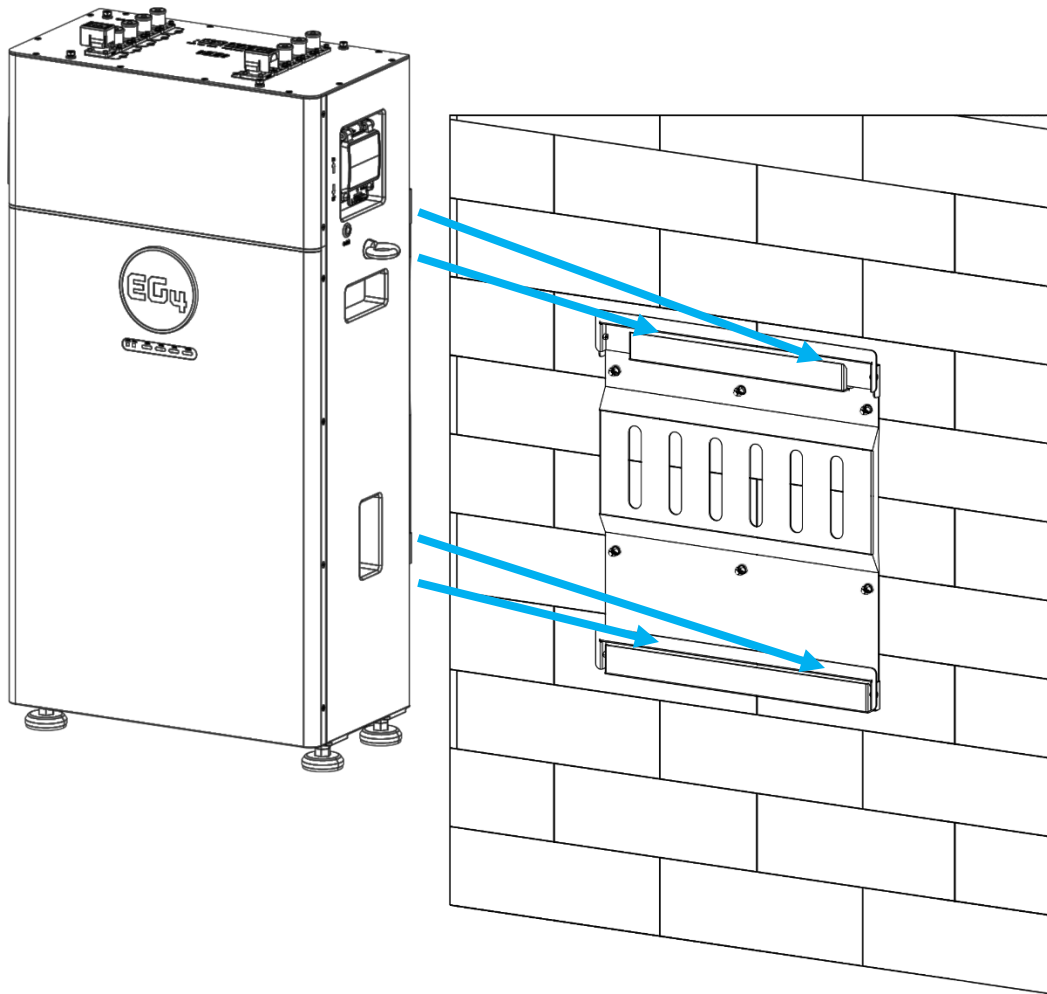
4. Using a level, ensure the bracket is level with the ground and drill six holes to accommodate the mounting hardware used.



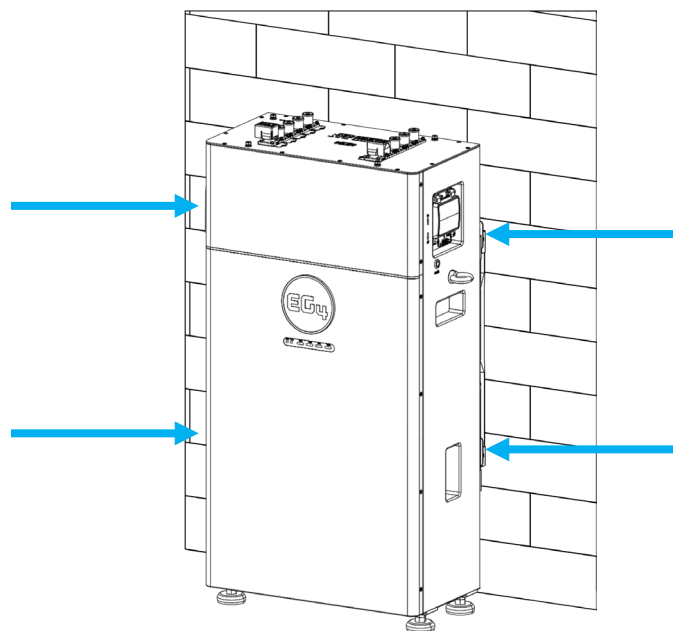
5. Secure the mounting bracket to the wall using the appropriate hardware required for the mounting surface. Use the included expansion bolts for concrete or brick mounting.



6. Attach the battery to the mounting bracket. Using the team-lift technique, lift the battery and hook the back flange of the battery onto the front flange of the mounting bracket.



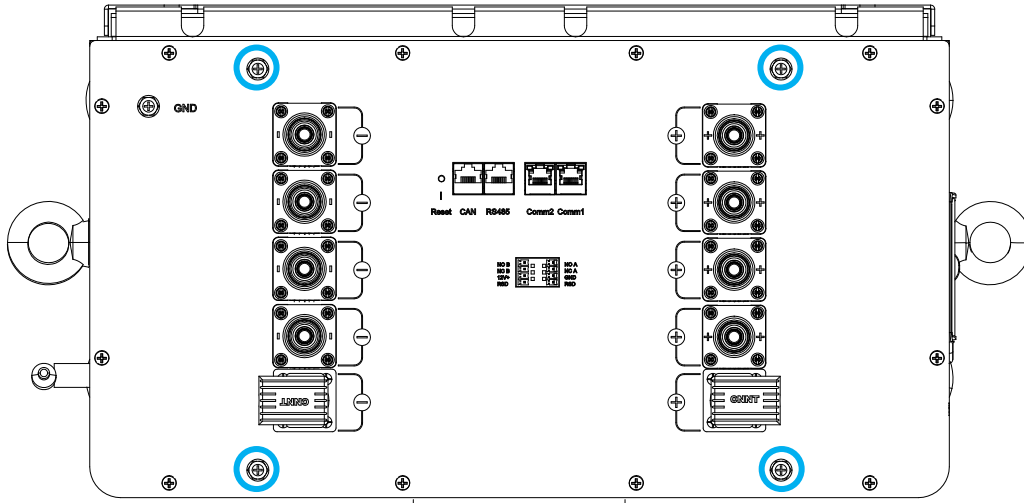
7. Secure the battery to the mounting bracket using the four included side screws from Step 1.



## 6.4 BATTERY WITH CONDUIT BOX

If installing the battery with the optional conduit box, follow the steps below continuing from step 7 in the previous section. Make sure to leave off the front cover of the conduit box until fully assembled.

1. Remove the four screws on the top of the battery as shown in the image below and retain them for use in step 2.

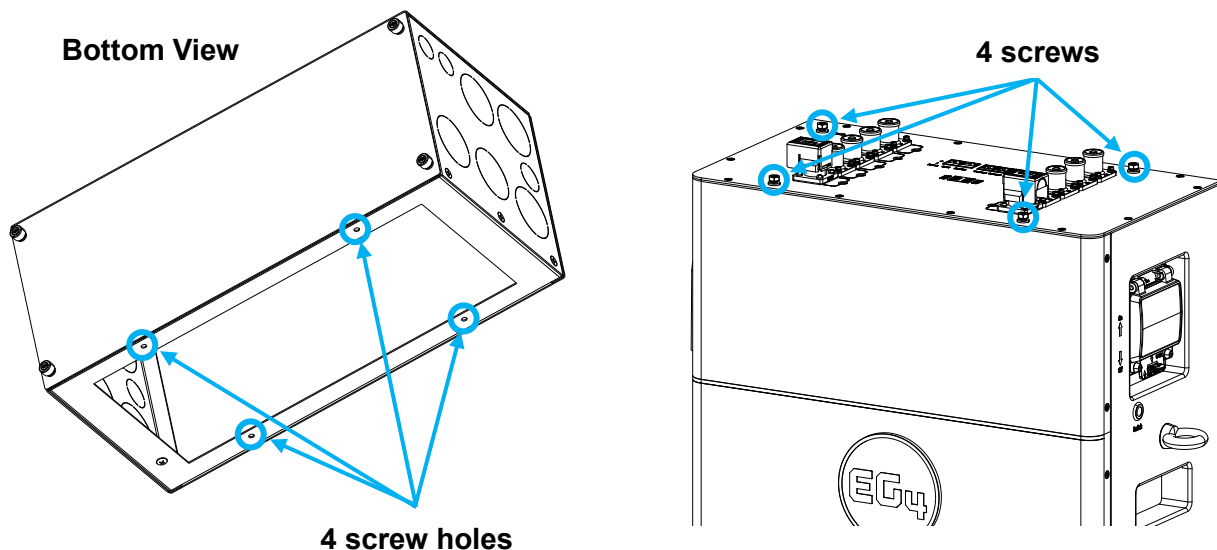


### NOTE:

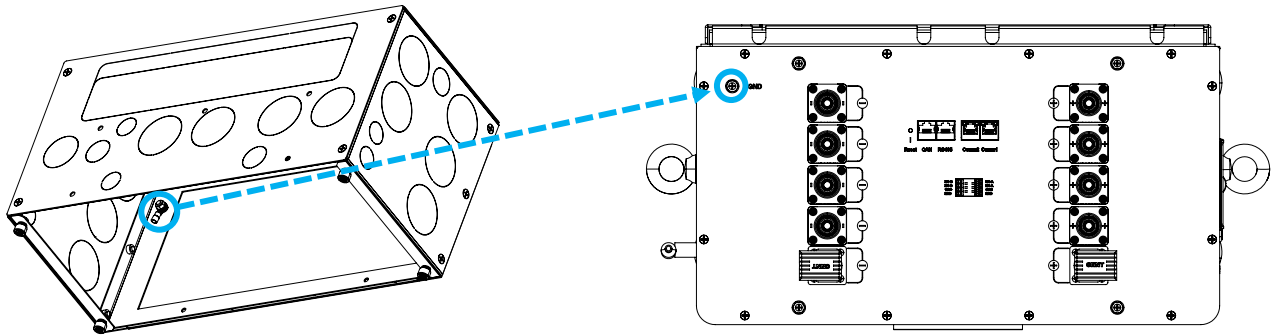
Refer to the EG4® 280Ah Indoor Buildable Conduit Box quick start guide at [www.eg4electronics.com](http://www.eg4electronics.com) for assembly instructions or scan the QR code below.



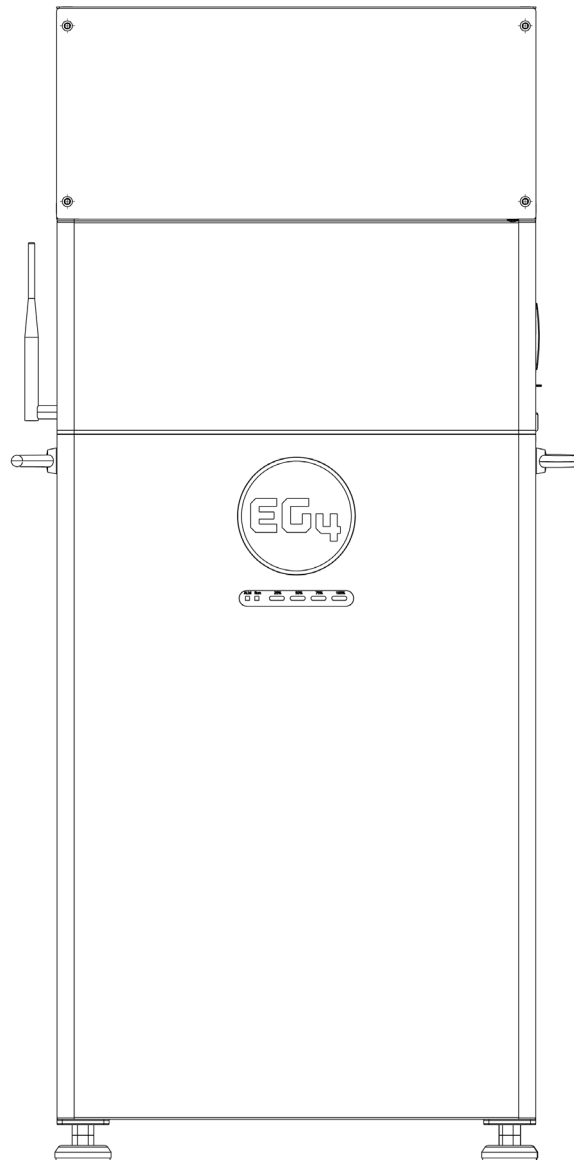
2. Identify the four screw locations on the bottom of the 280Ah indoor buildable conduit box that line up with the screw holes on top of the WallMount 314Ah Indoor battery. Place the conduit box on top of the battery and use the screws from step 1 to attach the box to the top of the battery.



3. Finally, attach the grounding conductor from the conduit box to the M6 grounding screw on top of the battery to the Equipment Grounding System to properly ground the battery.



The image below represents a complete install:

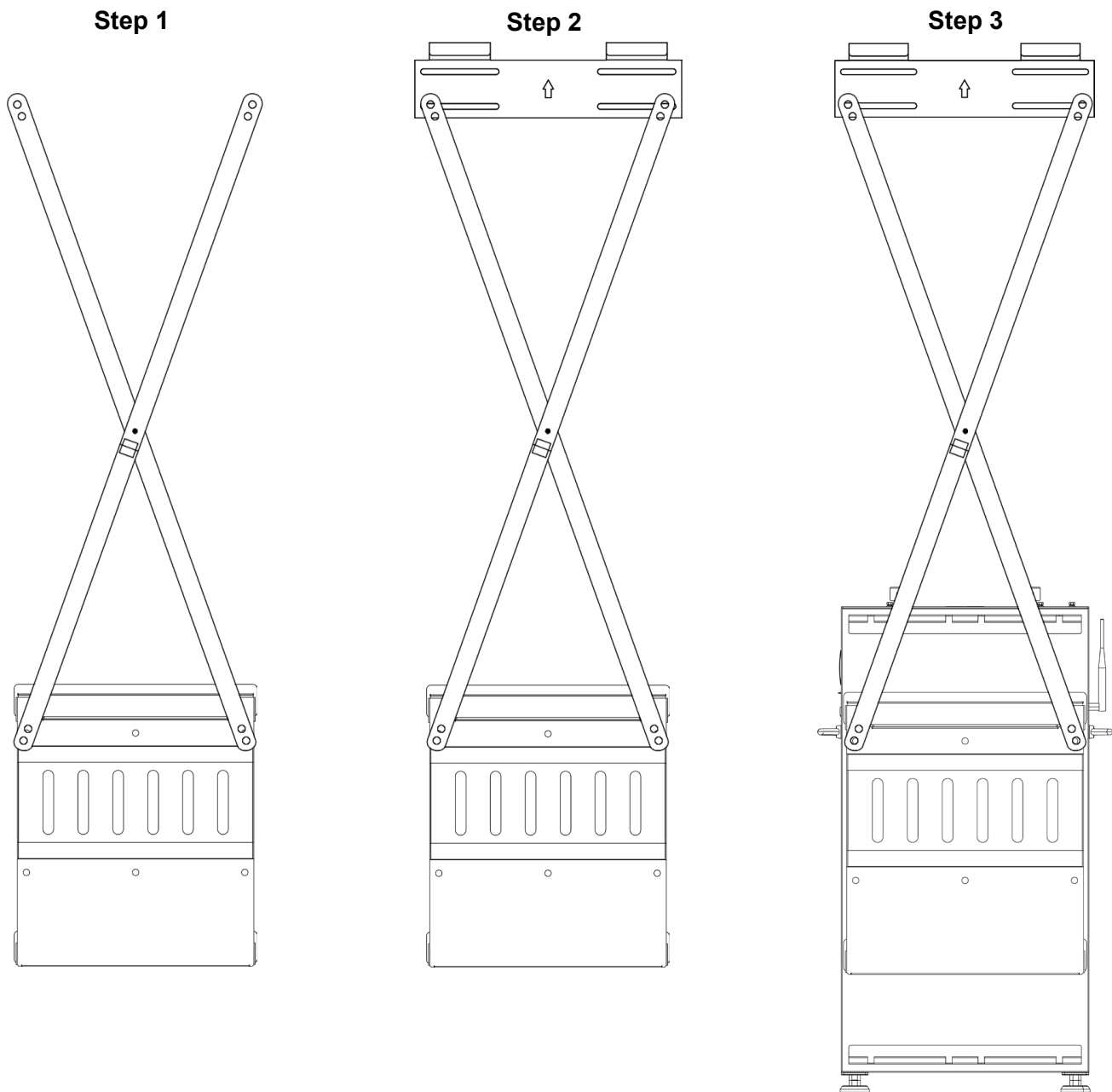


## 6.5 BATTERY, CONDUIT BOX, & 18KPV

Upon reaching step 4 in section 6.4, proceed with the following instructions to install with an 18kPV inverter and indoor buildable conduit box:

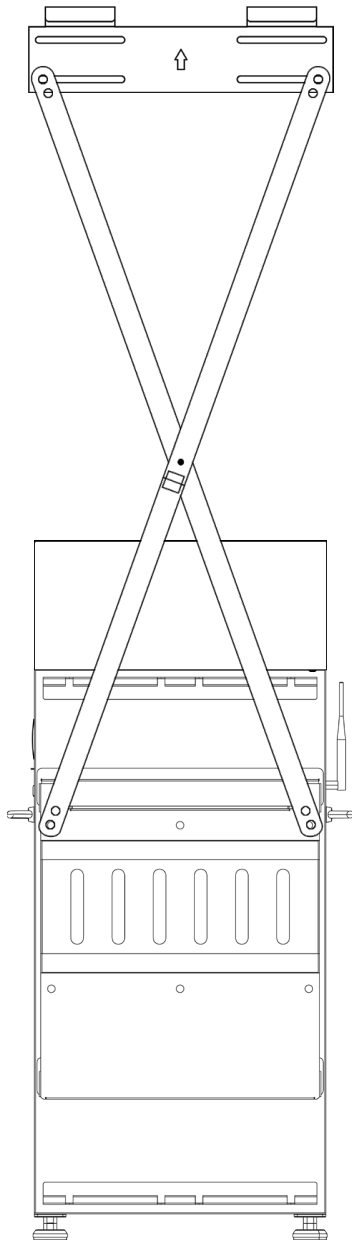
1. Align the included x-bracket with the drilled holes and mount the battery bracket and x-bracket to the wall, with the x-bracket against the wall.
2. Using uppermost hole on the x-bracket, attach the inverter mounting bracket using the appropriate hardware for the mounting surface. See the inverter user manual for more information.
3. Attach the battery to the mounting bracket. Use the team-lift technique to secure the battery on the bracket's flanges.
4. Attach the conduit box to the battery. See section 6.4 for installation instructions.
5. Install the 18kPV onto the inverter mounting bracket (included with inverter) making sure the holes of the inverter align with the conduit box and secure to each other using the included hardware.
6. Finally, properly ground the battery by attaching the grounding conductor from the conduit box to the M6 grounding screw on top of the battery.

*Images for representative purposes only.*

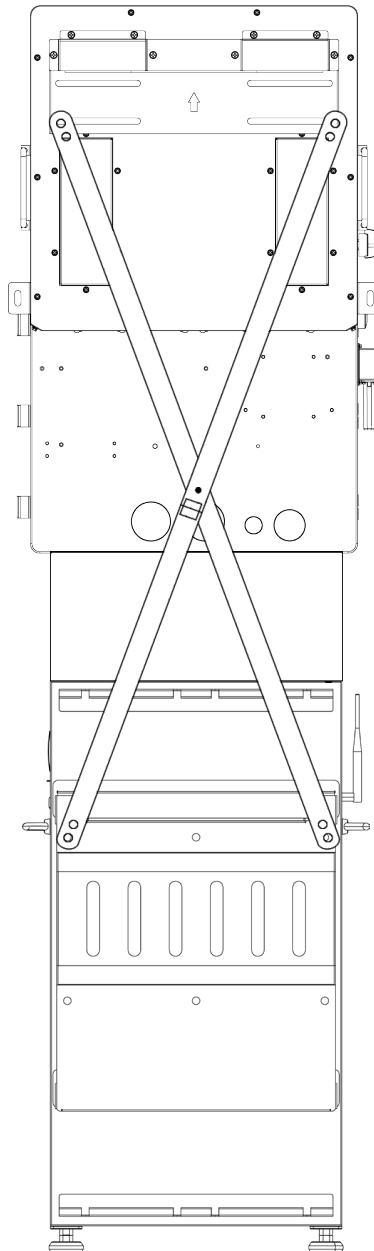


*Images for representative purposes only.*

**Step 4**



**Step 5**

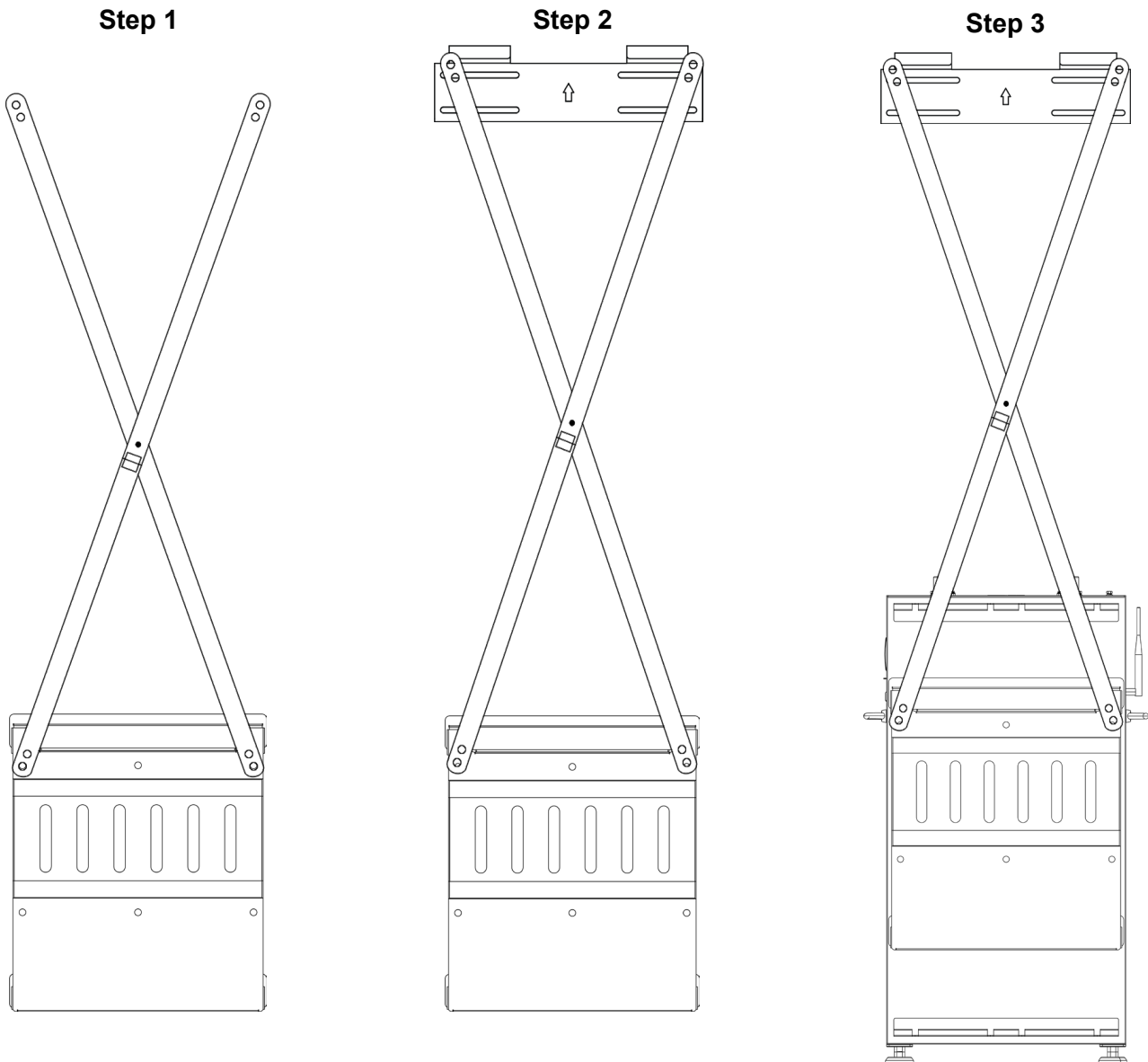


## 6.6 BATTERY, CONDUIT BOX, & 12KPV/FLEXBOSS18/21

Upon reaching step 4 in section 6.4, proceed with the following instructions to install with a 12kPV, FlexBOSS18, or FlexBOSS21 inverters along with the indoor buildable conduit box:

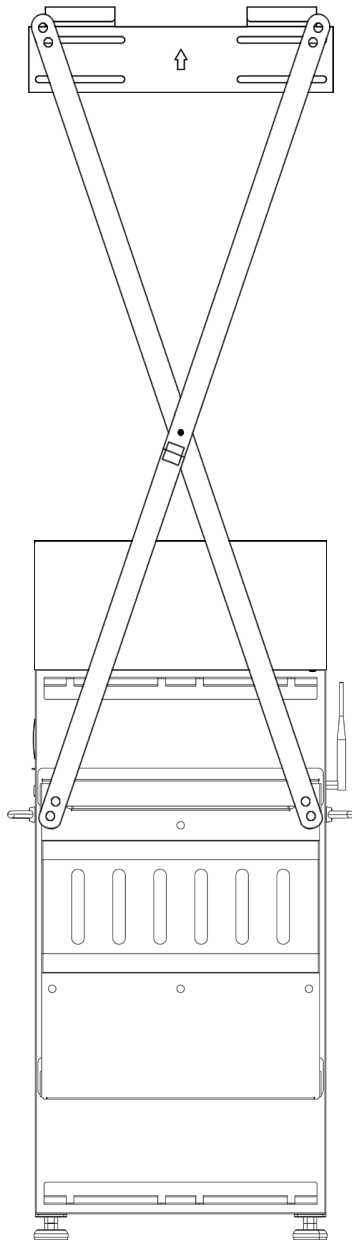
1. Align the included x-bracket with the drilled holes and mount the battery bracket and x-bracket to the wall, with the x-bracket against the wall.
2. Using the lowermost hole on the x-bracket, attach the inverter mounting bracket using the appropriate hardware for the mounting surface. See the inverter user manual for more information.
3. Attach the battery to the mounting bracket. Use the team-lift technique to secure the battery on the bracket's flanges.
4. Attach the conduit box to the battery. See section 6.4 for installation instructions.
5. Install the respective inverter onto the inverter mounting bracket (included with inverter) making sure the holes of the inverter align with the conduit box and secure to each other using the included hardware.
6. Finally, properly ground the battery by attaching the grounding conductor from the conduit box to the M6 grounding screw on top of the battery.

*Images for representative purposes only.*

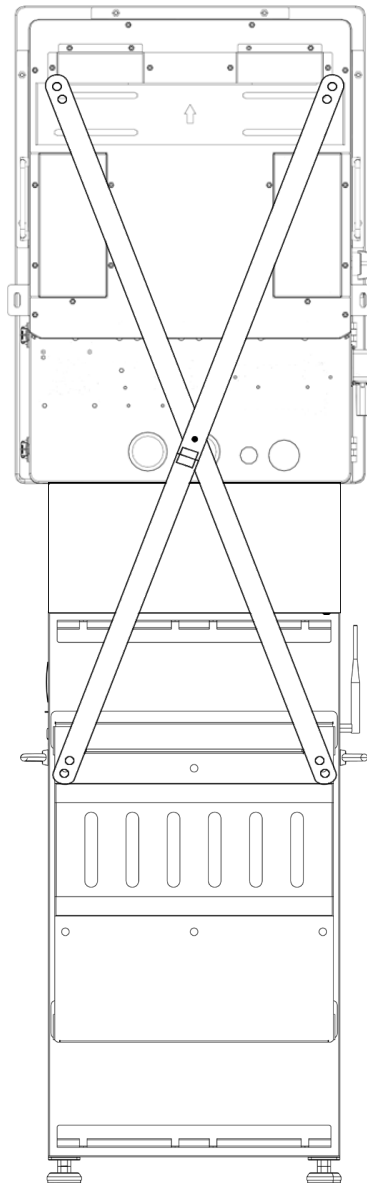


*Images for representative purposes only.*

**Step 4**



**Step 5**



## 7. TROUBLESHOOTING, MAINTENANCE & DISPOSAL

### ALARM DESCRIPTION AND TROUBLESHOOTING

When the ALM light on the battery control panel is on, it means that the battery has given an alarm or has been protected from potential damage. Check the cause of the alarm or fault through the app or BMS Tools and take appropriate measures or go directly to the battery site to troubleshoot.

Battery LED alarms are shown in the tables below:

### 7.1 LED INDICATOR STATUS AND DEFINITION

| STATUS         | NORMAL/<br>ALARM/<br>PROTECTION        | RUN                                                                               | ALM                                                                               | SOC INDICATOR LED                                                | NOTES                                          |
|----------------|----------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------|
|                |                                        |  |  | SOC1~SOC4                                                        | -                                              |
| Shutdown/Sleep |                                        | OFF                                                                               | OFF                                                                               | OFF                                                              | -                                              |
| Stand-by       | Normal                                 | ON                                                                                | OFF                                                                               | Based on battery<br>indicator<br>(Each LED indicates<br>25% SOC) | -                                              |
| Charge         | Normal                                 | Flash 1                                                                           | OFF                                                                               |                                                                  | -                                              |
|                | Alarm                                  | Flash 1                                                                           | Flash 1                                                                           |                                                                  | -                                              |
|                | End-off Voltage                        | ON                                                                                | OFF                                                                               |                                                                  | -                                              |
|                | Over-Temp<br>Protection                | OFF                                                                               | ON                                                                                |                                                                  | -                                              |
|                | Over-current transfer limit<br>current | Flash 1                                                                           | Flash 3/OFF                                                                       |                                                                  | Over-current<br>flash 3, limit-<br>current OFF |
| Discharge      | Normal                                 | Flash 2                                                                           | OFF                                                                               | Based on SOC<br>indicator                                        | -                                              |
|                | Alarm                                  | Flash 2                                                                           | Flash 3                                                                           |                                                                  | -                                              |
|                | End-off Voltage                        | OFF                                                                               | OFF                                                                               |                                                                  | Go to sleep                                    |
|                | Over-Temp/<br>Over-current Protection  | OFF                                                                               | ON                                                                                |                                                                  | -                                              |

The following bullets further define the values in the table above:

- **SOC:** Every light represents ~25% capacity
- **Shutdown:** All LED lights are off
- **Power on:** RUN light is always on
- **System failure:** ALM light is always on
- **Flash 1:** Flash once every second
- **Flash 2:** Flash once every 1.5 seconds
- **Flash 3:** Flash once every 2 seconds

## WARNING DEFINITIONS AND SOLUTIONS

| STATE     | TYPE                    | INDICATOR | SOLUTION                                       |
|-----------|-------------------------|-----------|------------------------------------------------|
| Charge    | Over current protection | ALM       | Stop charge, check the settings and limitation |
|           | Temperature protection  | ALM       | Stop charge, wait for the temp to recover      |
| Discharge | Over current protection | ALM       | Stop discharge, check if there is an overload  |
|           | Temperature protection  | ALM       | Stop discharge, wait for the temp to recover   |



### WARNING:

The “Historical Record” tab can indicate what occurred with the module before entering a warning or protection state. It is recommended to export this data into a text (.txt) file to provide the distributor with additional troubleshooting assistance.

If any warnings or faults from both tables persist, contact the distributor for additional troubleshooting steps.

## FAULT DEFINITIONS AND SOLUTIONS

| NO. | FAULT                                                  | ANALYSIS                                                     | SOLUTION                                                                                                                                            |
|-----|--------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Inverter communication failure                         | Check communication port connection, and battery ID setting. | Input proper “host” battery DIP switch address, and power cycle the battery.                                                                        |
| 2   | No DC output                                           | Open breaker, or battery voltage is too low.                 | Close the battery breaker or charge the battery.                                                                                                    |
| 3   | Power supply unstable                                  | Battery capacity is not at full power.                       | Check for proper battery cable connection.                                                                                                          |
| 4   | Battery cannot be fully charged                        | DC output voltage is below the minimum charge voltage.       | Check charging settings on the inverter to ensure they match battery requirements.                                                                  |
| 5   | ALM LED always on                                      | Short circuit                                                | Disconnect the power cable and check all cables.                                                                                                    |
| 6   | Battery output voltage is unstable                     | Battery management system is not operating normally.         | Press the reset button to reset the battery, then reboot the system.                                                                                |
| 7   | ALM LED flashes 20 times with SOC1 LED on              | Unbalanced voltage within a cell.                            | Deep discharge the battery bank (<20% SOC), then fully charge the battery bank.                                                                     |
| 8   | ALM LED flashes 20 times with SOC2 LED on              | Unbalanced temperature.                                      | Double check the temperature of the battery. If the temperature range is good, restart the battery. If the issue persists, contact the distributor. |
| 9   | ALM LED flashes 20 times with SOC3/SOC4 LED on         | Battery management system is damaged.                        | Contact the distributor.                                                                                                                            |
| 10  | Different SOC value of batteries in parallel operation | No issue.                                                    | Deep discharge the battery bank (<20% SOC), then fully charge the battery bank.                                                                     |
| 11  | Low voltage protection with no LED on                  | BMS is in low voltage protection and is in sleep mode.       | Fully charge and restart the battery. If issue persists, contact the distributor.                                                                   |
| 12  | Deep discharged with no LED on                         | Battery voltage is too low to start the BMS                  | Apply low charge to the battery until BMS is able to start up. If the issue persists, contact the distributor.                                      |

## 7.2 MAINTENANCE

| ITEM                 | MAINTENANCE INTERVAL | MAINTENANCE SOLUTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Cables         | Every 6 months       | <ol style="list-style-type: none"> <li>1. Inspect the power cable for any signs of mechanical damage and ensure that the terminal insulation sleeves are intact. If any damage is found, turn off the battery and perform maintenance or replace the cable.</li> <li>2. Check for any looseness in the power cable. If there are any signs of looseness, replace the cable.</li> <li>3. Examine the system for loose screws. If any screws are found loose, tighten them with a Phillips Head screwdriver.</li> </ol> |
| Communication Cables | Every 12 months      | <ol style="list-style-type: none"> <li>1. Verify that the terminals of the parallel communication cable are securely tightened. If any terminal is loose, retighten it.</li> <li>2. Check the communication cable for any obvious discoloration. If discoloration is present, shut down the battery and replace the communication cable. See section 9 for more information.</li> </ol>                                                                                                                               |
| System Status        | Every 6 months       | <ol style="list-style-type: none"> <li>1. Check if all parameters (system voltage, current, temperature, etc.) are normal when the system is running.</li> <li>2. Check if the main core components of the system, including system switches and contactors, are functioning properly.</li> </ol>                                                                                                                                                                                                                     |
| Charge & Discharge   | Every 6 months       | Perform a light load and shallow charge/discharge test to access the normality of the SOC and SOH status of the battery (using the EG4 monitor site to read the parameters). It is recommended that the depth of discharge and charge/discharge power should not exceed 20% of the rated value.                                                                                                                                                                                                                       |

### **7.3 BATTERY END OF LIFE**

The EG4® WallMount 314Ah Indoor Battery is designed to last for **more than 10 years** when used correctly, assuming no more than one charge-discharge cycle per day. We have worked tirelessly to ensure that our batteries will maintain a charge after thousands of cycles. However, when it comes time to retire the battery, there are a few things to consider.

Lithium iron phosphate batteries are considered a hazardous material and should not be disposed of by simply placing them in the trash. There are several websites and organizations that will accept this battery to recycle at little to no cost to the user. At EG4, we understand that we are working with customers across the United States and the world. Our recommendation is to go online and search the term “Lithium Battery Disposal Near Me.” There will likely be an assortment of organizations that can safely dispose of LFP batteries.

**We recommend calling ahead of time to ensure that the location is still open and accepting material.**

If users are unable to locate a disposal location safely, EG4 is here to help. Before dumping the battery or disposing of it incorrectly, please contact our customer service team for assistance.

### **8. WARRANTY INFORMATION**

For information regarding warranty registration on EG4® Electronics products, please navigate to <https://eg4electronics.com/warranty/> and select the corresponding product to begin the registration process.

## **9. CHANGELOG**

V1.0

- Published quick start guide

## NOTES

[illegible]

# EG4

ELECTRONICS

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