

QUICK-START GUIDE

EG4® WALLMOUNT INDOOR 280Ah LITHIUM BATTERY



This guide has been created to give the end-user a quick and easy process to install and commission the WallMount Indoor 280Ah lithium battery in a variety of configurations.



TABLE OF CONTENTS

1.	TECHNICAL SPECIFICATIONS	1
2.	ABBREVIATIONS	3
3.	BATTERY SAFETY	4
3.1	SAFETY INSTRUCTIONS.....	4
3.2	IMPORTANT SAFETY NOTIFICATIONS	4
4.	SÉCURITÉ DE LA BATTERIE.....	6
4.1	CONSIGNES DE SÉCURITÉ	6
4.2	NOTIFICATIONS DE SÉCURITÉ IMPORTANTES.....	6
5.	PACKING LIST	8
5.1	LOCATION SELECTION AND INSTALLATION.....	8
6.	PARALLEL EXAMPLES	9
6.1	BATTERY CABLE CONNECTIONS	9
6.2	ADDITIONAL CONFIGURATIONS	10
7.	ORIENTATION EXAMPLES.....	14
8.	INSTALLING THE BATTERY	15
8.1	STANDALONE BATTERY INSTALL	15
8.2	BATTERY INSTALL WITH CONDUIT BOX	16
8.1	X-BRACKET OVERVIEW	17
8.2	INSTALL WITH CONDUIT BOX & EG4® 12KPV, FLEXBOSS 18 AND FLEXBOSS 21 INVERTER ..	18
8.3	BATTERY INSTALL WITH CONDUIT BOX & EG4® 18KPV INVERTER.....	20
8.4	PRE-WIRE STEPS AND WIRING	22
8.5	MULTIPLE BATTERY PARALLEL INSTALL	22
8.6	MULTIMETER TESTING AND WIRING	23
8.7	BATTERY STARTUP AND SHUTDOWN PROCEDURE	24
9.	FRONT PANEL INDICATOR LIGHTS	25
9.1	RUN/ALM LIGHTS	25
9.2	SOC INDICATOR LIGHTS.....	25
10.	BMS COMMUNICATIONS.....	26
10.1	CLOSED LOOP COMMUNICATIONS.....	26
11.	FIRMWARE UPDATES.....	28
12.	WARRANTY INFORMATION	28
13.	CHANGELOG.....	29

1. TECHNICAL SPECIFICATIONS

MODULE OPERATING PARAMETERS			
PARAMETER	BMS		RECOMMENDED SETTING
TOTAL ENERGY CAPACITY	14.3kWh @25C, 100% SOC		-
VOLTAGE	51.2V		-
CAPACITY	280Ah		-
CHARGING VOLTAGE (BULK/ABSORB)	56.0V (+/-0.8V)		56.2V (+/-0.2V)
FLOAT	-		54V (+/-0.2V)
SOC CUTOFF	-		20%*
CHARGING CURRENT	140A (Max. continuous)		60 – 140A
DISCHARGING CURRENT	140A (Max. continuous) 200A (Max. continuous for 30 min)		60 – 140A
BMS PARAMETERS			
CHARGE	SPEC	DELAY	RECOVERY
CELL VOLTAGE PROTECTION	3.8V	1 sec	3.45V
MODULE VOLTAGE PROTECTION	60.0V	1 sec	55.2V
OVER CHARGING CURRENT 1	>205A	10 sec	-
OVER CHARGING CURRENT 2	>225A	3 sec	-
TEMPERATURE PROTECTION	<23°F or >158°F <-5°C or >70°C	1 sec	>32°F or <140°F >0°C or <60°C
DISCHARGE	SPEC	DELAY	RECOVERY
CELL VOLTAGE PROTECTION	2.3V	1 sec	3.1V
MODULE VOLTAGE PROTECTION	44.8V	1 sec	48V
OVER DISCHARGING CURRENT 1	>205A	10 sec	60 sec
OVER DISCHARGING CURRENT 2	>300A	3 sec	60 sec
SHORT CIRCUIT	>600A	<0.1 mS	-
TEMPERATURE PROTECTION	<-4°F or >167°F <-20°C or >75°C	1 sec	>14°F or <149°F >-10°C or <65°C
PCB TEMP PROTECTION	>230°F (>110°C)	1 sec	@ <176°F (<80°C)
GENERAL SPECIFICATIONS			
PARAMETER	SPEC		CONDITION
CELL BALANCE	120mA	Passive Balance	Cell Voltage Difference >40mV
TEMPERATURE ACCURACY	3%	Cycle Measurement	Measuring Range -40°F to ≈212°F (-40°C to ≈100°C)
VOLTAGE ACCURACY	0.5%	Cycle Measurement	For Cells & Module
CURRENT ACCURACY	3%	Cycle Measurement	Measuring Range -200A – 200A
SOC	5%	-	Integral Calculation
POWER CONSUMPTION	Sleep & Off Mode	<300uA	Storage/Transport/Standby
POWER CONSUMPTION	Operating Mode	<25mA	Charging/Discharging
COMMUNICATION PORTS	RS485/CAN		Can be customized
BATTERY HEATER SPECIFICATIONS			
PARAMETER	SPEC		CONDITION
VOLTAGE	56V		-
POWER CONSUMPTION	224W		-
INTERNAL BATTERY TEMPERATURE	≤32°F (0°C)≥41°F (5°C)		Heat On/Heat Off

*EG4 recommends this value be set no lower than 20% to maintain the recommended 80% depth of discharge.

ENVIRONMENTAL PARAMETERS

CHARGING RANGE	32° to ≈122°F (0°C to ≈50°C)
DISCHARGING RANGE	-4°F to ≈131°F (-20°C to ≈55°C)
STORAGE RANGE	32°F to ≈113°F (0°C to ≈45°C)
INGRESS PROTECTION	IP20
OPERATING ALTITUDE	<16404 ft. (<5000m)

PHYSICAL SPECIFICATIONS

DIMENSIONS (H×W×D)	34.1 in.×18.1 in.×10.4 in. (865 mm×460 mm×264 mm)
WEIGHT	286.6 lbs. (130 kg)
DESIGN LIFE	>10 Years
CYCLE LIFE	>8000 cycles, 0.5C 80% DOD
LIFETIME PRODUCTION	82.6MWh**

SAFETY CERTIFICATIONS

CERTIFICATIONS	UL1973, UL 9540A
----------------	------------------

** $(51.2V \times 280Ah / 1000 \times 80\% \times 8000 \text{ cycles} / 1000) 90\% = MWh$

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
- I_{sc} – 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 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 and rack are 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.

1. 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.
2. 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.
3. All warning labels and nameplates on this battery should be clearly visible and must not be removed or covered.
4. The installer should consider the safety of future users when choosing the battery's correct position and location as specified in this manual.
5. 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 distributor.



WARNING!

Cancer and Reproductive Harm – See 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 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*
- *Dommages 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.

1. 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.
2. 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.
3. Toutes les étiquettes d'avertissement et les plaques signalétiques de cette batterie doivent être clairement visibles et ne doivent pas être retirées ou couvertes.
4. 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.
5. 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 23 °F. Si un courant de charge est observé lorsque la température interne de la batterie est inférieure à 23 °F, débranchez immédiatement la batterie et consultez le distributeur.



Cancer et troubles de la reproduction – Voir www.P65Warnings.ca.gov pour plus de détails.

DISCLAIMER

EG4® se réserve le droit de modifier le contenu de ce document à tout moment sans préavis. Veuillez consulter www.eg4electronics.com pour la version la plus récente de nos manuels/fiches techniques.

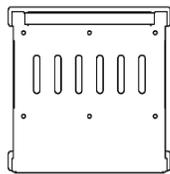
5. PACKING LIST

The items listed below will arrive with the product shipment:

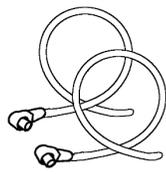
EG4 WallMount Indoor 280Ah



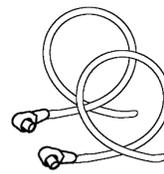
(1) EG4 WallMount Indoor 280Ah



(1) Mounting Bracket*



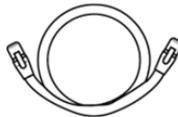
(2) Red power cables 2/0 AWG (39.4 in.)



(2) Black power cables 2/0 AWG (39.4 in.)



(6) Concrete Expansion Bolts



(1) Battery to Inverter Communication Cable

***The included mounting bracket will arrive attached to the back of the battery**

5.1 LOCATION SELECTION AND INSTALLATION

Requirements for installation location:

- The WallMount Indoor battery is heavy. Use a lift or other equipment to lift and carry the unit.
- The battery can be installed against a flat wall, but the weight of the battery should not be fully supported by the wall. To help with this requirement, the battery comes with pre-installed feet that should be used to carry the weight of the battery.
- If the battery is installed against a wall, the wall should be made of non-combustible material. If this is not possible, then the unit **MUST** have a minimum of 2 in. (50.8mm) clearance from the wall. Also note that whatever mounting solution that is used to grant the 2 in. clearance from the wall **MUST** be made of a non-combustible material.
- If installing on flat ground as a standalone unit, ensure there is proper drainage on the ground surrounding the battery to maintain integrity of the module over time and prevent damage from flooding. If installing against a wall, ensure at least a 6.69 in. (170 mm) gap on each side of the unit for adequate airflow and operations.
- Ensure the battery is mounted upright.



NOTE: The battery will be shipped with temporary lifting handles for removing the battery from its packaging. The battery is very heavy. Use the team-lift technique during installation and remove the temporary lifting handles before making any connections within the system.



WARNING: Please be sure not to make any electrical connections until the system is properly placed where it will operate.

6. PARALLEL EXAMPLES

The diagrams below show different parallel orientations. These diagrams are for reference only!

6.1 BATTERY CABLE CONNECTIONS

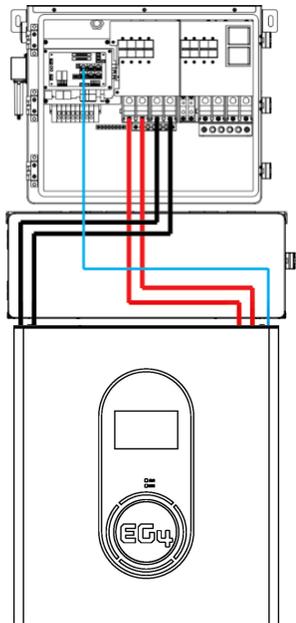
The following battery cable connection diagrams are examples using the internal busbars to parallel the batteries together and attach the inverter(s) to the batteries. When relying on the internal busbars, up to 3 batteries are supported in parallel when connected to a single inverter, 4 batteries in parallel when connected to 2 inverters, or up to 5 batteries in parallel when connected to 3 inverters.

Systems with more batteries than these configurations require the use of an external fused positive busbar and an unfused negative busbar rated at a minimum of 200A per battery. Each fuse should be a maximum of 250A. Alternatively, larger systems could rely on the 18kPV's ability to draw from different battery packs while still paralleling inverters rather than utilizing external busbars.

The maximum recommended number of paralleled 18kPV inverters is 6. If this approach is used, we recommend a ratio of 2 batteries per pack controlled by each 18kPV inverter. Separating packs is only recommended if each pack's average SOC is monitored over time and does not diverge by more than 10%. Common busbars are superior to separating battery packs, but it may be difficult to source fused positive busbars rated to greater than 1800 Amps. This translates into separating packs larger than 9 batteries. Refer to NEC code and the local AHJ for exact requirements.



NOTE: In the following diagrams, units are spaced 6.69 in. (170 mm) apart. Local regulations may require a larger minimum battery spacing. Check with the local AHJ for these requirements. If longer parallel cables than are available in the optional paralleling kit are necessary, please check with the distributor for availability.



Note: To comply with the UL9540 listing for this integrated battery, conduit box, and inverter system, the batteries must be wired as shown using the supplied inverter to battery cables. An additional paralleling kit is required for each additional paralleled battery (sold separately).



Caution: To minimize voltage drop in the wire, the battery cables should maintain optimum length. The 53.1 in. cables from the "parallel kit" are sufficient to daisy chain the batteries.

Figure 1 – (1) 18kPV with (1) WallMount

6.2 ADDITIONAL CONFIGURATIONS

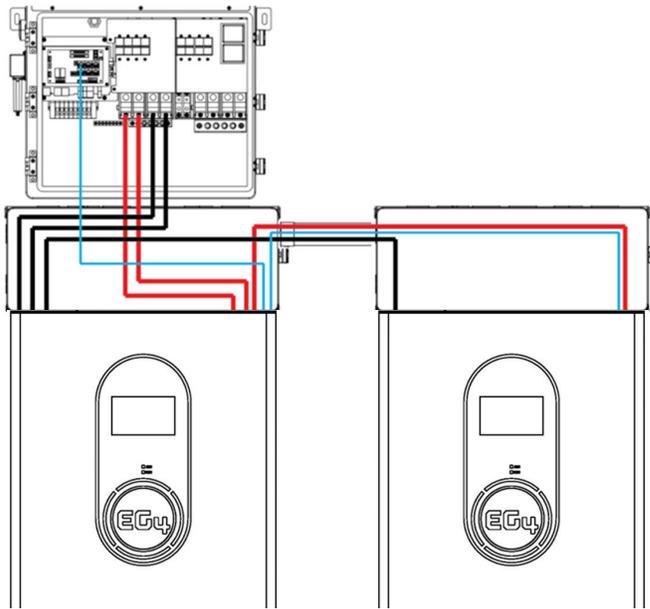


Figure 2 – (1) 18kPV with (2) WallMount



Note: Some configurations require additional wiring/connectors to achieve the example layouts. Inverter to inverter paralleling cables are not shown in the following diagrams. Other configurations can be achieved by using external busbars. Please seek the guidance of an electrician or qualified personnel for optional system layout.

Pro Tip: One EG4-18kPV and a minimum of 2 WallMount units is the recommended configuration to maximize the system's functionality.

Color Code

	Parallel/Comms
	Positive
	Negative



Reminder!

The separation between batteries should be ≥ 6.69 in.

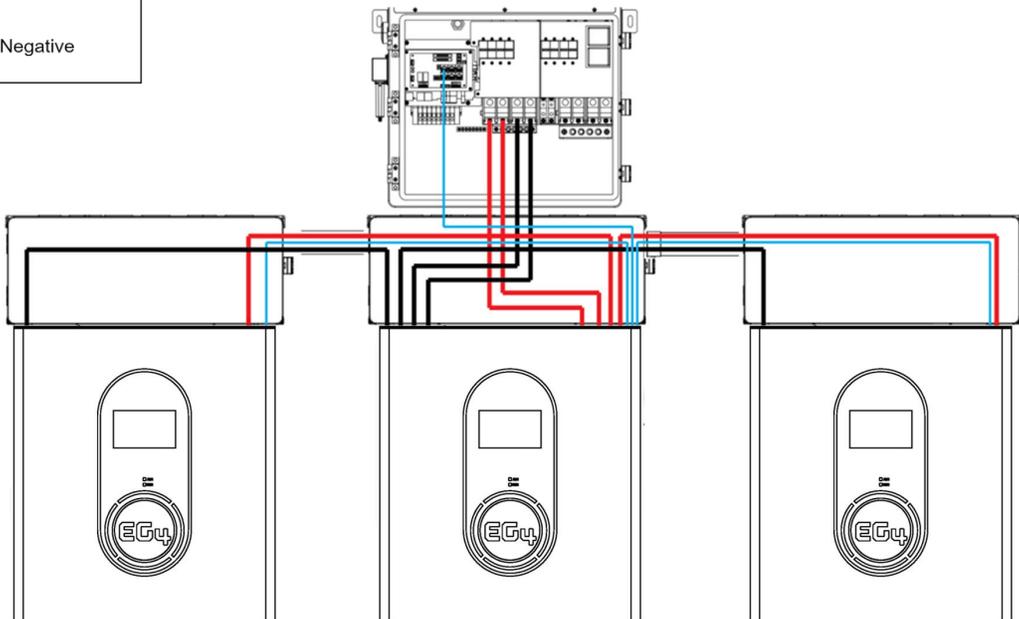


Figure 3 – (1) 18kPV with (3) WallMount

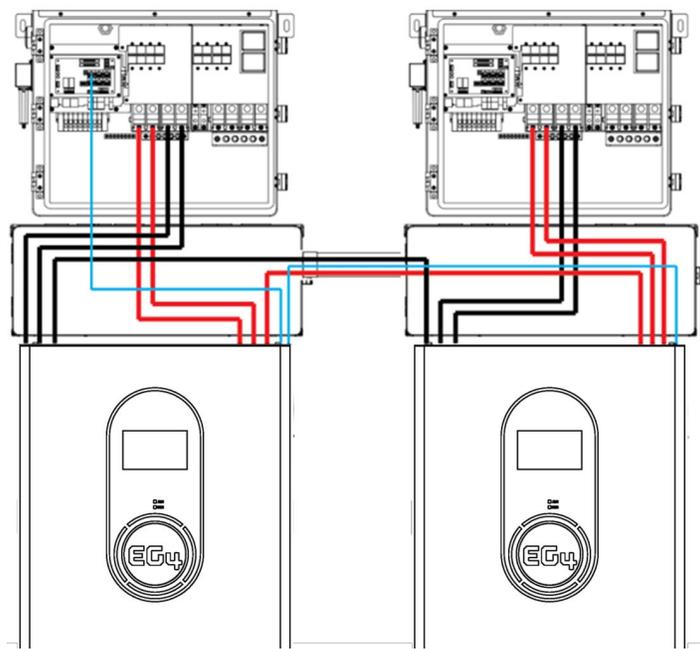


Figure 4 – (2) 18kPV with (2) WallMount

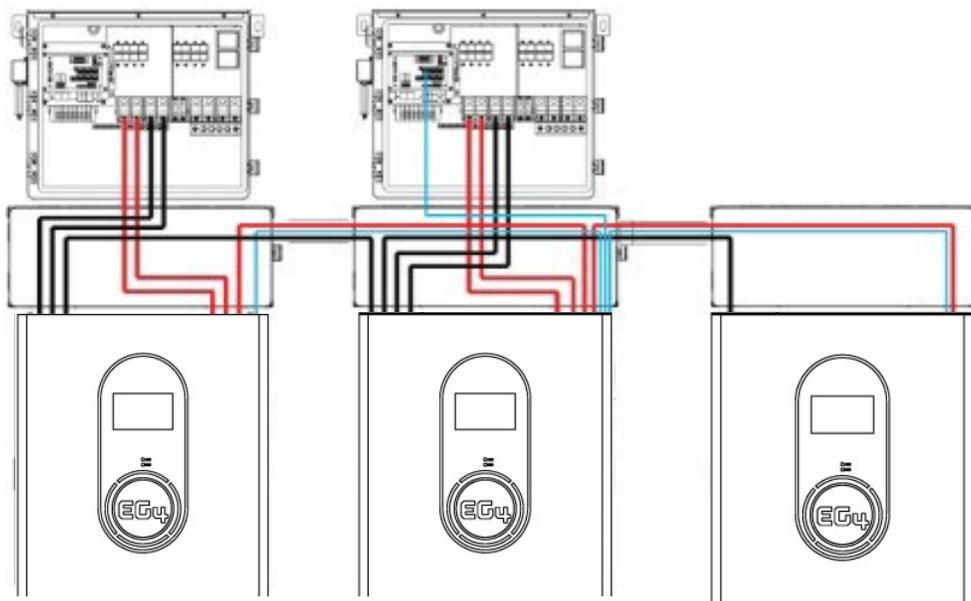


Figure 5 – (2) 18kPV with (3) WallMount

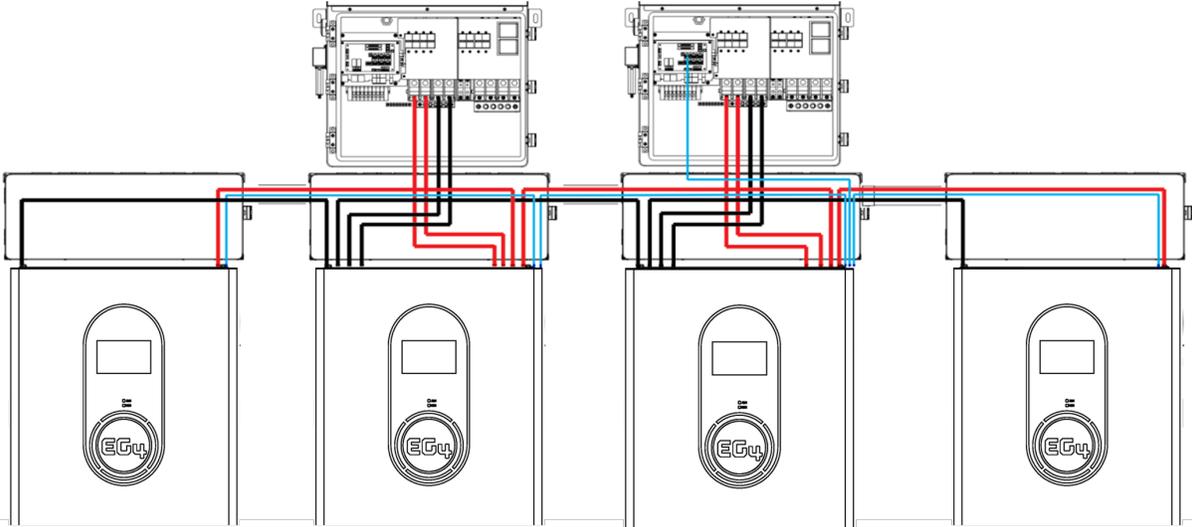


Figure 6 – (2) 18kPV with (4) WallMount

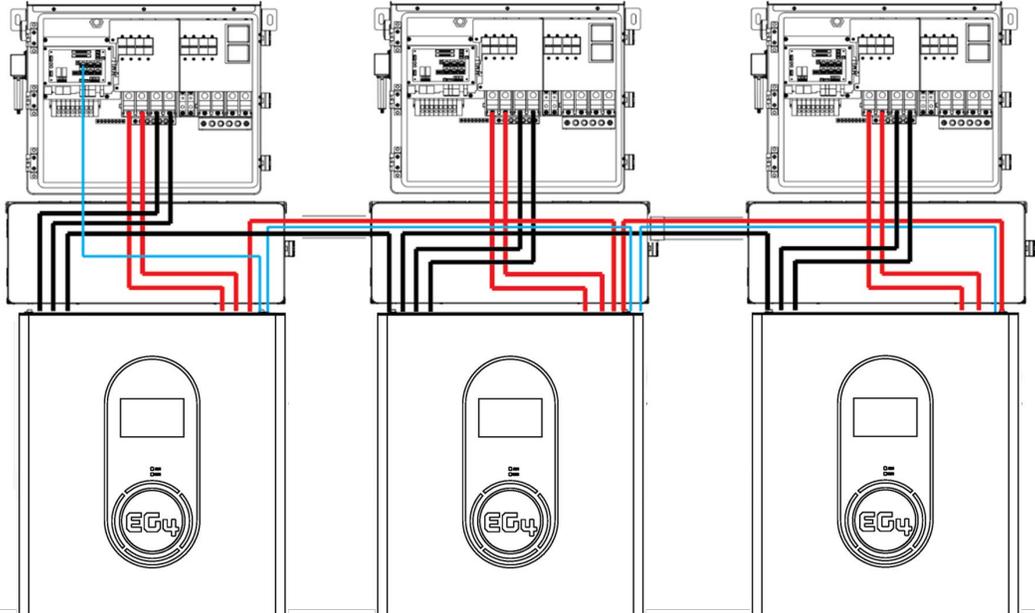


Figure 7 – (3) 18kPV with (3) WallMount

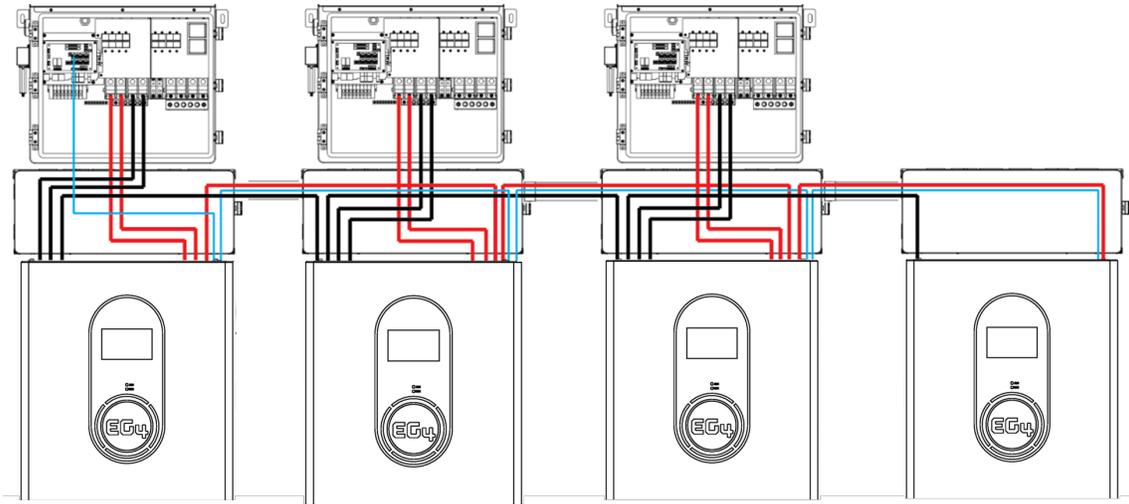
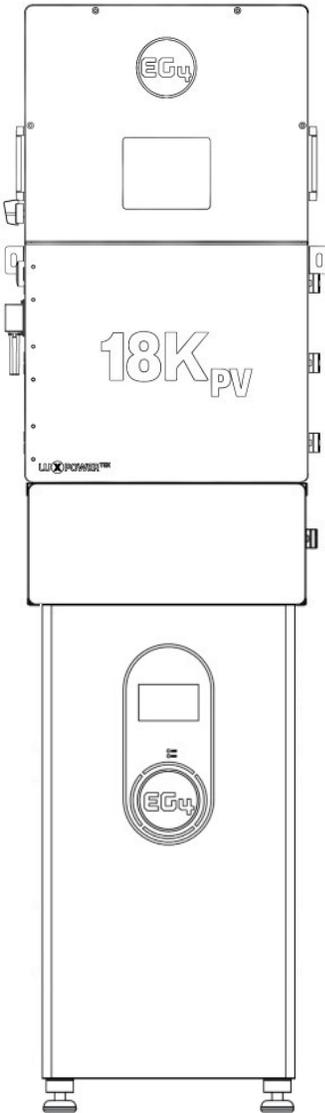


Figure 8 - (3) 18kPV with (4) WallMount

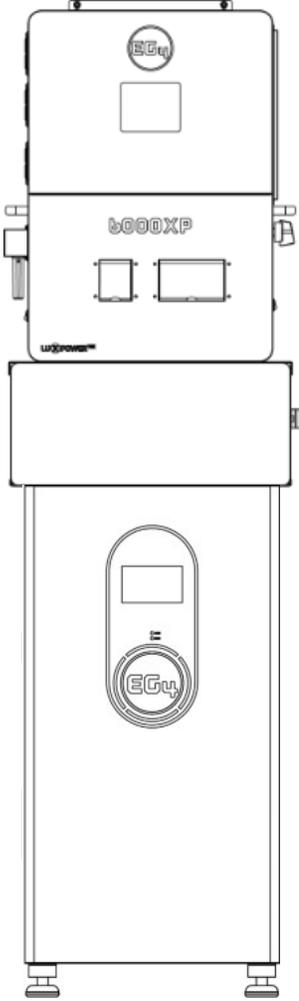
For more information on connecting and paralleling this battery, please use the QR code below to navigate to the Connection Overview & Paralleling Guide.



7. ORIENTATION EXAMPLES



(1) 18kPV Inverter +
(1) WallMount Indoor
Battery



(1) 6000XP Inverter +
(1) WallMount Indoor
Battery



NOTE: *The battery will be shipped with temporary lifting handles for removing the battery from its packaging. EG4 recommends these handles be removed before mounting to the wall making any connections.*

8. INSTALLING THE BATTERY

Follow the steps listed below to ensure the WallMount Indoor battery is mounted correctly.



WARNING: Do not put EG4 WallMount batteries in series!

The BMS and internal components are not designed to handle this setup, which could cause the modules to fail, leading to damage.



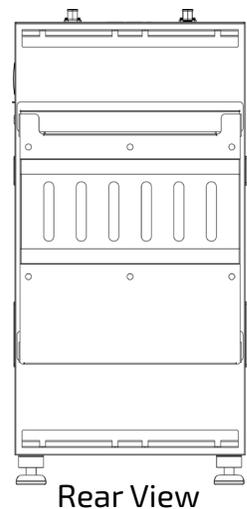
NOTE: The battery will be shipped with temporary lifting handles for removing the battery from its packaging. EG4 recommends these handles be removed before mounting to the wall making any connections.



NOTE: When installing multiple batteries or adding a battery to an existing rack, please ensure all batteries are charged to 100% before paralleling together. This step is crucial to optimize battery performance and ensure proper operation.

8.1 STANDALONE BATTERY INSTALL

1. Remove the 4 set screws holding the mounting bracket to the back of the battery pack and set them to the side.
2. Remove the mounting bracket from the battery.
3. Position the top of the mounting bracket on the wall at the desired mounting height, with a minimum clearance from the ground of 29.2 in. (742mm).
4. Using a level, ensure the bracket is level and drill (using a 3/8" bit) 6 holes to accommodate the mounting hardware used.
5. Secure the mounting bracket to the wall using the included expansion bolts or appropriate hardware required for the mounting surface.
6. Attach the battery pack to the mounting bracket. Using the team-lift technique, lift the battery and hook the back flange onto the front flange of the mounting bracket.
7. Secure the battery to the mounting bracket using the 4 included side screws.
8. Finally, properly ground the battery, attaching a grounding conductor to the M6 grounding screw on top of the battery to the Equipment Grounding System. **DO NOT GROUND THE NEGATIVE BATTERY CABLE!**

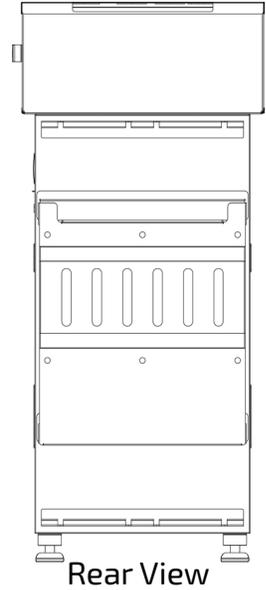


8.2 BATTERY INSTALL WITH CONDUIT BOX

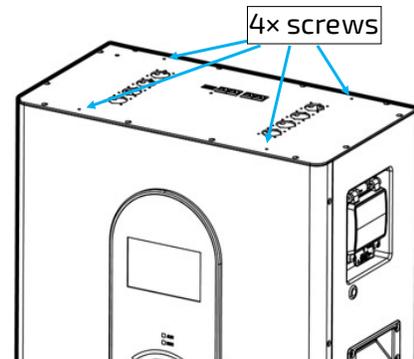
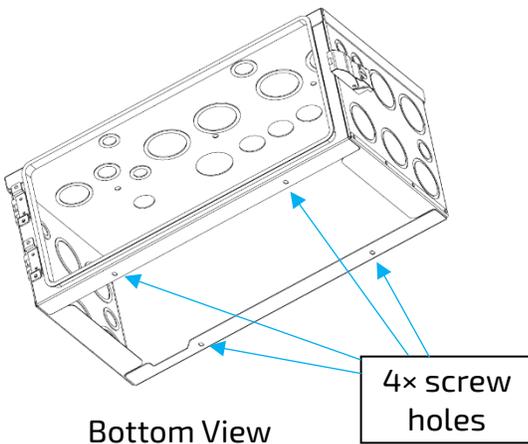
1. Remove the 4 set screws holding the mounting bracket to the back of the battery pack and set them to the side.
2. Remove the mounting bracket from the battery.
3. Position the top of the mounting bracket on the wall at the desired mounting height, with a minimum clearance from the ground of 29.2 in. (742mm).



NOTE: *If mounting the bracket is at 29.2 in. (742mm) from the ground, the battery will rest on the ground*



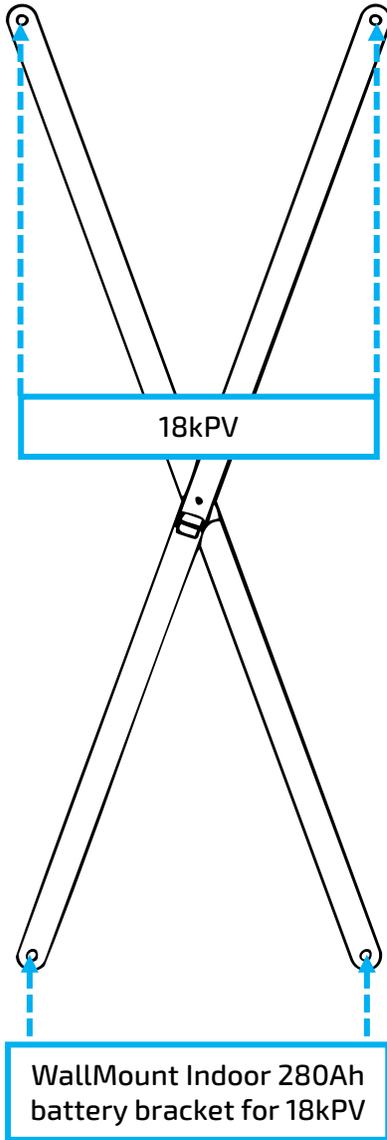
4. Using a level, ensure the bracket is level and drill (using a 3/8" bit) 6 holes to accommodate the mounting hardware used.
5. Secure the mounting bracket to the wall using the included expansion bolts (concrete or brick walls) or appropriate hardware for the mounting surface.
6. Attach the battery to the mounting bracket. Using the team-lift technique, lift the battery and hook its back flange onto the front flange of the mounting bracket.
7. Secure the battery to the mounting bracket using the 4 included side screws.
8. Remove the four screws on the top of the battery as shown below and retain them for use in Step 9. See the image below for reference.
9. Identify the four screws locations shown below that line up with the thumb screws located in Step 8. Place the conduit box on top of the battery and use the thumb screws to attach the box to the top of the battery. See the image below for reference.
10. Finally, properly ground the battery, attaching a grounding conductor to the M6 grounding screw on top of the battery to the equipment grounding system. **DO NOT GROUND THE NEGATIVE BATTERY CABLE!**



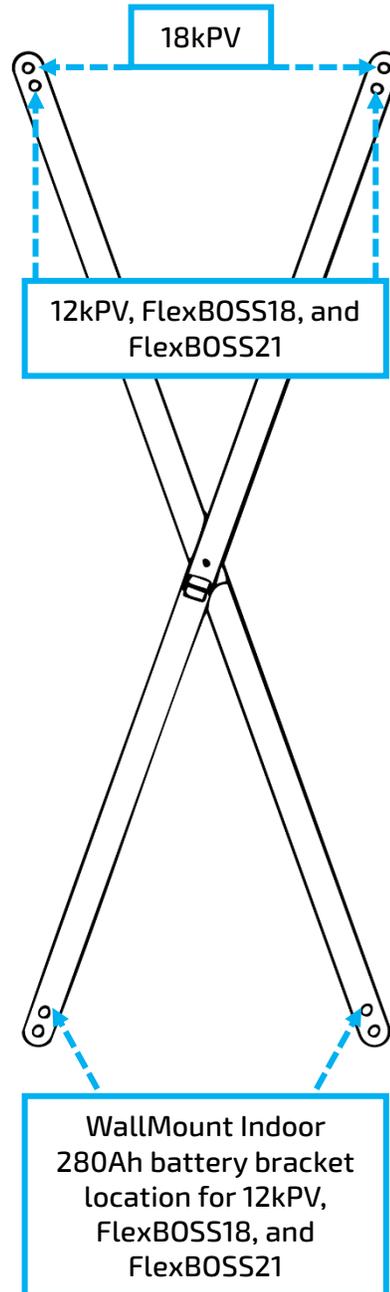
8.1 X-BRACKET OVERVIEW

There are two sets of mounting holes on the x-bracket. The outermost holes in the image below are used for the 18kPV. The innermost holes are for the 12kPV, FlexBOSS18, and FlexBOSS21.

X-bracket (v1)



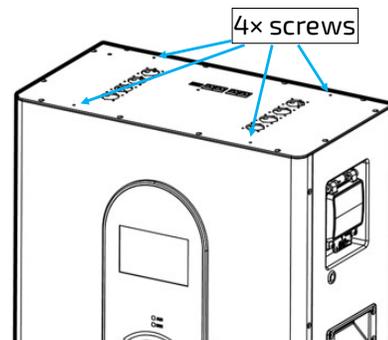
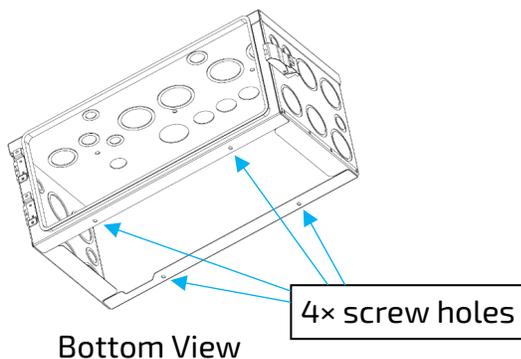
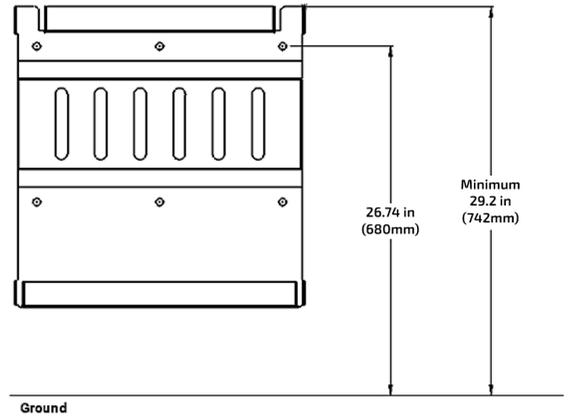
X-bracket (v2)



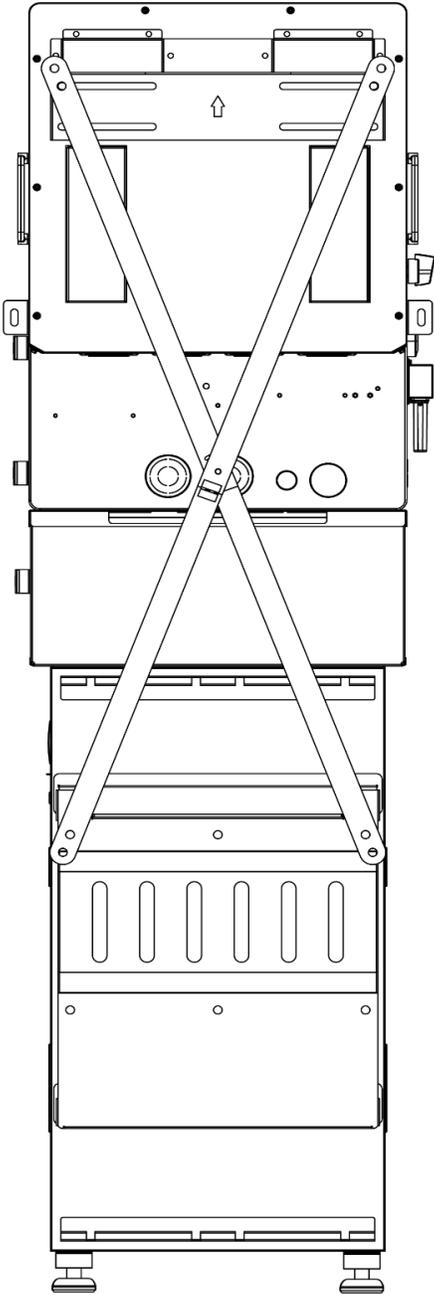
8.2 INSTALL WITH CONDUIT BOX & EG4® 12KPV, FLEXBOSS 18 AND FLEXBOSS 21 INVERTER

Follow the steps listed below to ensure proper connections are made in the system:

1. Remove the 4 set screws holding the mounting bracket to the back of the battery pack and set them to the side.
2. Remove the mounting bracket from the battery.
3. Position the top of the mounting bracket on the wall at the desired mounting height, with a minimum clearance from the ground of 29.2 in. (742mm).
4. Using a level, ensure the bracket is level and drill (using a 3/8" bit) 6 holes to accommodate the mounting hardware used.
5. Align the provided X-bracket with the holes on the mounting bracket and secure both to the wall, using the included expansion bolts (concrete/brick walls) or appropriate hardware required for the mounting surface. The X-bracket will rest behind the mounting plate, against the wall.
6. Remove the four screws on the top of the battery as shown below and retain them for use in Step 7. See the image below for reference.
7. Identify the four screws locations shown below that line up with the thumb screws located in Step 6. Place the conduit box on top of the battery and use the thumb screws to attach the box to the top of the battery. See the image below for reference.
8. Attach the inverter to the inverter mounting bracket and ensure the inverter's bottom knockouts align with the conduit box. If using a 6000XP, it will not have a mounting bracket of its own. It has two mounting ears which are already attached (one on top and one on bottom), each with 3 screw holes, that are used to mount the unit to the wall. The bottom mounting ear will fit behind the conduit box once it is in place on the wall, and the 3 screw holes can be accessed from inside the conduit box.
9. Finally, properly ground the battery, attaching a grounding conductor to the M6 grounding screw on top of the battery to the equipment grounding system. **DO NOT GROUND THE NEGATIVE BATTERY CABLE!**



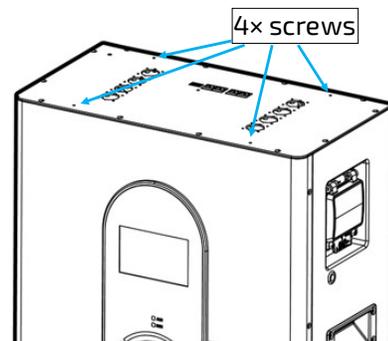
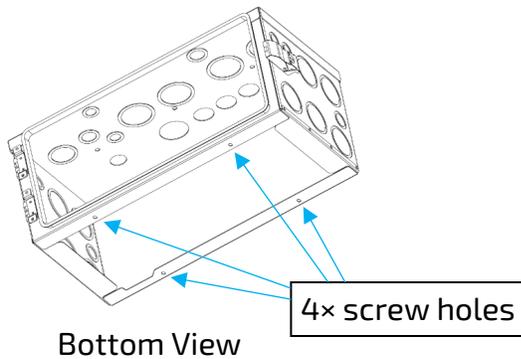
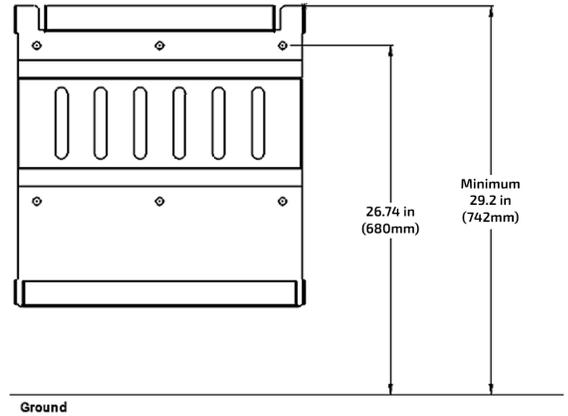
The image to the right represents a completed install showing a rear view.



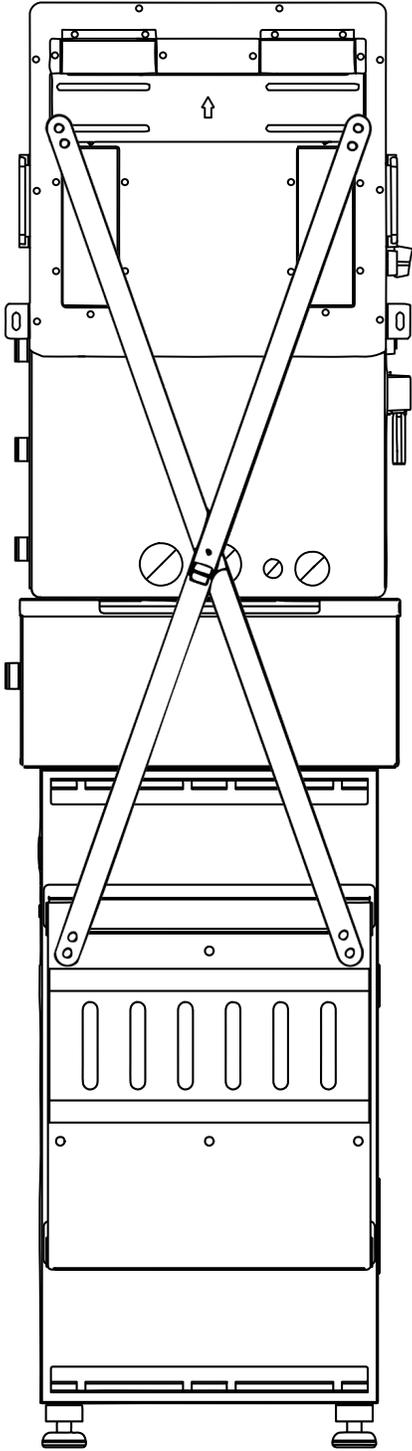
8.3 BATTERY INSTALL WITH CONDUIT BOX & EG4® 18KPV INVERTER

Follow the steps listed below to ensure proper connections are made in the system:

1. Remove the 4 set screws holding the mounting bracket to the back of the battery pack and set them to the side.
2. Remove the mounting bracket from the battery.
3. Position the top of the mounting bracket on the wall at the desired mounting height, with a minimum clearance from the ground of 29.2 in. (742mm).
4. Using a level, ensure the bracket is level and drill (using a 3/8" bit) 6 holes to accommodate the mounting hardware used.
5. Align the provided X-bracket with the holes on the mounting bracket and secure both to the wall, using the included expansion bolts (concrete/brick walls) or appropriate hardware required for the mounting surface. The X-bracket will rest behind the mounting plate, against the wall.
6. Remove the four screws on the top of the battery as shown below and retain them for use in Step 7. See the image below for reference.
7. Identify the four screws locations shown below that line up with the thumb screws located in Step 6. Place the conduit box on top of the battery and use the thumb screws to attach the box to the top of the battery. See the below image for reference.
8. Attach the inverter to the inverter mounting bracket and ensure the inverter's bottom knockouts align with the conduit box. If using a 6000XP, it will not have a mounting bracket of its own. It has two mounting ears which are already attached (one on top and one on bottom), each with 3 screw holes, that are used to mount the unit to the wall. The bottom mounting ear will fit behind the conduit box once it is in place on the wall, and the 3 screw holes can be accessed from inside the conduit box.
9. Finally, properly ground the battery, attaching a grounding conductor to the M6 grounding screw on top of the battery to the equipment grounding system. **DO NOT GROUND THE NEGATIVE BATTERY CABLE!**



The image to the right represents a completed install showing a rear view.



8.4 PRE-WIRE STEPS AND WIRING

The battery will come with 2 sets of 2/0 AWG power cables. Please refer to the inverter documentation that the battery will be connected to for torque specs and wire sizing needs for specific use cases.

8.5 MULTIPLE BATTERY PARALLEL INSTALL



WARNING: Make sure to install the communication cables into their respective ports! Improper installation may lead to component damage! EG4 recommends double checking all points of connection before introducing power to the system to mitigate any potential issues.



IMPORTANT:

The battery can charge/discharge up to 200A before the BMS shuts off the pack. Ensure the inverter is configured to handle this high of a current and size all wires accordingly! Refer to an NEC approved ampacity chart or consult with the installer or a solar electrician for more information.

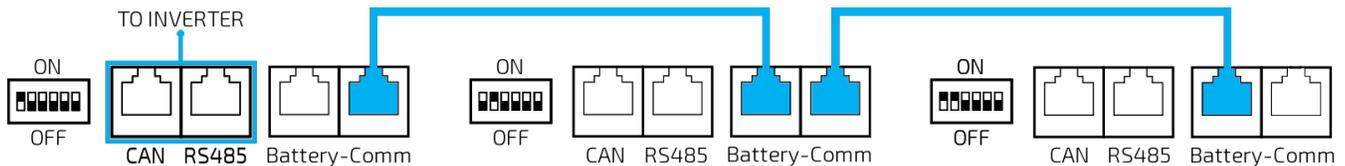
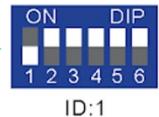


NOTE: When installing multiple batteries or adding a battery to an existing rack, please ensure all batteries are charged to 100% before paralleling together. This step is crucial to optimize battery performance and ensure proper operation.

When paralleling multiple WallMount Indoor batteries, a paralleling kit must be purchased through the distributor.

Follow the steps outlined below to ensure proper installation of multiple batteries in parallel.

1. Ensure all circuit breakers are open (off). Using a multimeter, check for voltage at all available disconnects and lines. Once no voltage is confirmed, proceed to the next step.
2. Set the DIP switch address on the master battery to address 1, and all other batteries in parallel to differing addresses going in ascending order. (See image) →
3. Reset the battery BMS via the power button to register the address change.
4. Set up communication between the batteries via the “Battery-Comm” ports by using a CAT 5, 5e, or 6 cable.



5. The battery set to address 1 will connect directly to the inverter BMS communication port via CAT 5, 5e or CAT 6 cable.
6. Install battery paralleling cables between the batteries included in the optional paralleling kit ensuring the connectors are seated properly.

For more information on connecting and paralleling this battery, please use the QR code below to navigate to the Connection Overview & Paralleling Guide.



8.6 MULTIMETER TESTING AND WIRING



DANGER! *No connections should be made until proper polarity of cables has been confirmed!*



WARNING: *Make sure to install the communication cables into their respective ports! Improper installation may lead to component damage!*

EG4 recommends double checking all points of connection before introducing power to the system to mitigate any potential issues.

Follow the steps outlined below to both test the inputs and wire the battery pack to the inverter.

1. Ensure all circuit breakers are open (off). Using a multimeter, check for voltage at all available disconnects and lines. Once no voltage is confirmed, proceed to the next step.
2. Connect the included sets of 2/0 AWG (70mm²) connectors to the battery's positive and negative terminals. The connectors will "click" when seated properly.



NOTE: *If installing the battery pack with the optional conduit box, secure the conduit fittings to the enclosure using the counter nuts after step 2.*

3. If applicable, route the battery power cables through the conduit box to the inverter **without making any connections!**
4. Ensure proper polarity of cables. Once confirmed, proceed to the next step.
5. Install the positive battery cable(s) to the inverter's positive battery terminals following proper torque values.
6. Install the negative battery cable(s) to the inverter's negative battery terminals following proper torque values.

8.7 BATTERY STARTUP AND SHUTDOWN PROCEDURE

The battery comes with pre-charged resistors which promote a specific sequence of events to provide power to the inverter. Pre-charged resistors are essential in high voltage systems to help reduce the in-rush current the inverter will request from the batteries upon startup.

Startup

After all physical connections are made and the inverter is ready to accept battery power, follow the steps listed below:

1. Close (turn on) the battery's circuit breaker.
2. Wait ~5 seconds, then turn on the battery's BMS via the power button on the side of the unit.



NOTE:

When using multiple batteries in parallel, repeat the steps listed above per battery, always starting with the master.

Shutdown

1. Power off the battery's BMS via the power button on the side of the unit.
2. Open (turn off) the battery's circuit breaker.



NOTE:

When using multiple batteries in parallel, repeat the steps listed above per battery, always starting with the master.

9. FRONT PANEL INDICATOR LIGHTS

9.1 RUN/ALM LIGHTS

The WallMount Indoor 280Ah lithium battery features 2 LED status indicator lights on the front panel of the unit. Their functions are listed below:



ALM – The ALM light indicates a static, red color and powers on when a fault occurs. Please refer to the Troubleshooting & Maintenance Guide for more information on specific faults and required actions.

RUN – The RUN light will indicate a solid, green color when the battery is in an idle state. When the battery is either charging or discharging, the light will indicate a blinking, green color.

Light Description	Indicator	Color	Indication Description
ALM	Static	Red	A fault has occurred
	Static	Green	Battery is in the idle state
RUN	Blinking	Green	Battery is charging/discharging

9.2 SOC INDICATOR LIGHTS

The unit also features a ring of LED lights surrounding the EG4 logo that indicate the SOC (state of charge) of the unit. The table below provides detailed logic of the LED lights.

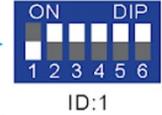
SOC	Number of LEDs	Color
0%-15%	1 (lower quadrant)	Red
16%-25%	1 (lower quadrant)	Green
26%-50%	2 (lower, left quadrants)	Green
51%-75%	3 (lower, left, right quadrants)	Green
76%-100%	4 (all 4 quadrants)	Green

10. BMS COMMUNICATIONS



WARNING: Make sure to install the communication cables into their respective ports!
 Improper installation may lead to component damage!
 EG4 recommends double checking all points of connection before introducing power to the system to mitigate any potential issues.

EG4 batteries interface with compatible inverters by designating a “Master” battery (DIP switch ID No. 1).



The battery will connect directly to the inverter via an RS485 battery communications cable or a standard CAT 5, 5e, or 6 cable for closed loop communications with supported EG4 and non-EG4 inverters using CAN bus protocol.

The PC software “BMS TOOLS” provides real-time battery analysis and diagnostics. The battery cannot communicate with the software and a closed loop inverter simultaneously.

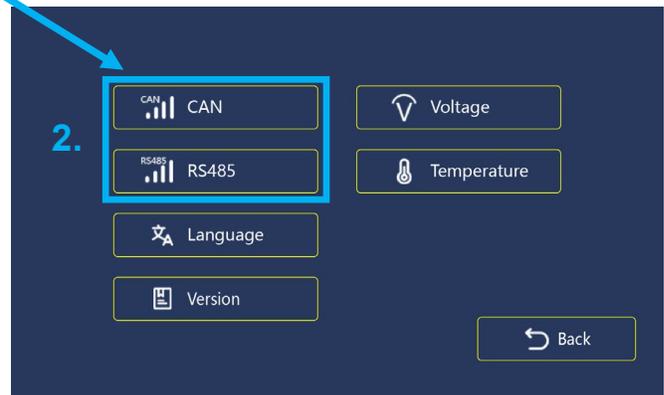
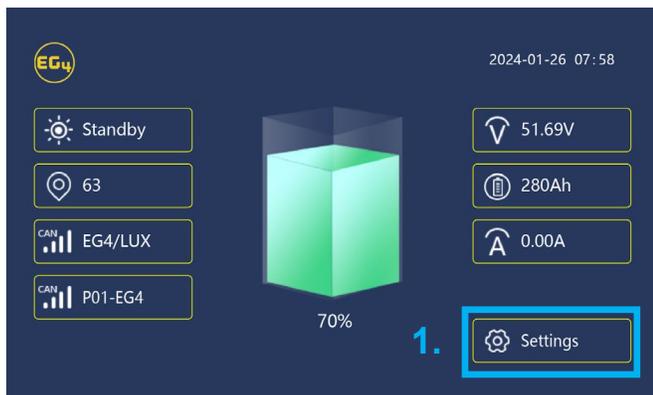
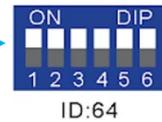
Scan the QR code on the left for a video walking through the BMS Tools setup process.

Scan the QR code on the right for a white sheet walking through the BMS Tools setup process.

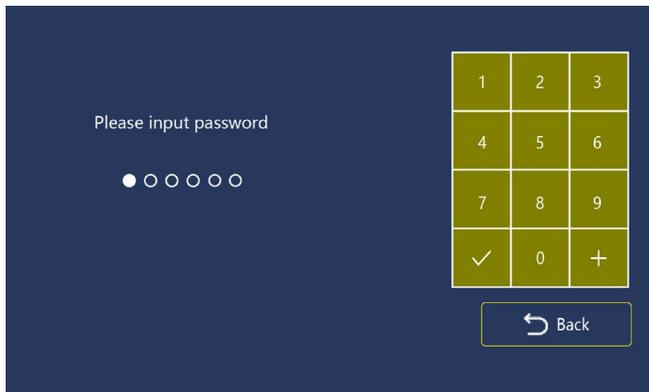


10.1 CLOSED LOOP COMMUNICATIONS

1. Power off all battery DC breakers and BMS power buttons.
2. The inverter protocol can only be changed with the master battery temporarily set to address 64 (all switches ON). After the DIP switch is changed, restart the BMS using the BMS power button for the settings to take effect. (See image)
3. On the master battery, press the Settings button (shown below/left), which will take you to the next screen (shown below/right), where you will select either CAN or RS485 protocol.



- Selecting CAN or RS485 will take you to a password screen. The default password for each section is "123456".



- Select the corresponding CAN protocol (P01-EG4/LUX) for the system if using EG4 inverters, (See table below).
- Change the master DIP switch address back to address 1 for inverter communications & power cycle the BMS. (See image)



The tables below show compatibility lists depending on the type of communication protocol used for closed-loop communications between battery and inverter.

CLOSED LOOP COMMS. WITH EG4 INVERTERS	
MODEL	PROTOCOL SELECTION
18kPV/6000XP	CAN – P01

CAN PROTOCOL LIST	
PROTOCOL #	MANUFACTURER
P01-EG4/LUX	EG4/LUX
P02-GRW	Growatt
P03-SLK	Sol-Ark
P04-DY	Deye
P05-MGR	Megarevo
P06-VCT	Victron
P07-LUX	Luxpower
P08-SMA	SMA

RS485 PROTOCOL LIST	
PROTOCOL #	MANUFACTURER
P01-EG4	EG4
P02-GRW	Growatt
P03-SCH	Schneider



NOTE: Closed loop communications using RS485 protocols require a specific pinout on the comms cable from battery to inverter. Refer to the table below for EG4 specifics.

EG4 INVERTER MODEL	PROTOCOL	COMMUNICATION CABLE PINOUT
18kPV	CAN	To inverter – RJ 45 Pin 4-H & Pin 5-L To battery – RJ 45 Pin 4-H & Pin 5-L
	RS485	To inverter – RJ45 Pins 7-A & 8-B To battery – RJ45 Pins 1-B & 2-A
6000XP	CAN	To inverter – RJ 45 Pin 4-H & Pin 5-L To battery – RJ 45 Pin 4-H & Pin 5-L
	RS485	To inverter – RJ45 Pins 1-B & 2-A To battery – RJ45 Pins 1-B & 2-A
3000EHV (Legacy Product)	RS485	To inverter – USB Type B To battery – RJ45 Pins 1-B & 2-A
8KEXP (Legacy Product)	CAN	To inverter – RJ 45 Pin 4-H & Pin 5-L To battery – RJ 45 Pin 4-H & Pin 5-L
	RS485	To inverter – RJ45 Pins 7-B & 8-A To battery – RJ45 Pins 1-B & 2-A
6000EX (Legacy Product)	RS485	To inverter – RJ45 Pins 3 & 5 To battery – RJ45 Pins 1-B & 2-A
6500EX (Legacy Product)	RS485	To inverter – RJ45 Pins 3 & 5 To battery – RJ45 Pins 1-B & 2-A

11. FIRMWARE UPDATES

Always ensure all system components are fully up to date before commissioning the system. Scan the QR code below to navigate to the Battery Firmware Changelog & Update Guide. If encountering difficulty during the updating process, contact the distributor for more information.



12. 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.

13. CHANGELOG

Version 1.3.8

- Added additional surge value for battery discharge, 200A for 30 minutes.

Version 1.3.7

- Added section 8.7 for battery startup and shutdown procedure

Version 1.3.6

- Modified and added section 8.3, 8.4 and 8.5 of information about X bracket v1 and v2.

Version 1.3.5

- Modified sections 8.2 and 8.3 to have correct wording.

Version 1.3.4

- Added operating altitude into environmental parameters

Version 1.3.3

- Minor formatting changes for readability
- Modified the weight and dimensions of the unit
- Modified Max. Continuous charging current from 200A to 140A
- Modified Max. Continuous discharging current from 200A to 140A
- Modified recommended discharging current from 160A to 60 – 140A
- Modified temperature range for charge range, discharge range, and storage range

Version 1.3.2

- Modified recommended charge current from 60 – 160A to 60 – 140A

Version 1.3.1

- Added new spacing requirements from 7 in. to 6.69 in.
- Added “Operating Altitude” value to spec sheet

Version 1.2.9

- Modified warranty in section 11

Version 1.2.8

- Modified verbiage for consistency

Version 1.2.7

- Replaced Low DC Cutoff with SOC Cutoff at 20% with a note under the table.
- Added a note regarding fully charging batteries when paralleling or adding a new battery into existing rack.
- Minor formatting changes

Version 1.2.6

- Replaced line drawings to reflect newest CAD files
- Added X-bracket angle for 12kPV installation

Version 1.2.5

- Added additional x-bracket image showing the angle for 18kPV install (Section 7.3)

Version 1.2.4

- Added QR code links to supplemental white sheets

Version 1.2.3

- Technical Specifications table updated to add Total Energy Capacity and Discharge Rate line items.
- Minor formatting changes

Version 1.2.2

- Section 9.1 edited to reflect new process for accessing Communication Protocol lists.

Version 1.2.1

- Document Changelog added
- Unit minimum spacing requirements changed from 12 in. to 7 in. on pages 7 & 8

Version 1.2

- Updated minor formatting

Version 1.1

- Changed the UL 9540A certification from (Testing) to (Passed) in the Technical Specifications on page 2

Version 1.0

- Quick Start Guide published



CONTACT US

support@eg4electronics.com

(903) 609-1988

www.eg4electronics.com