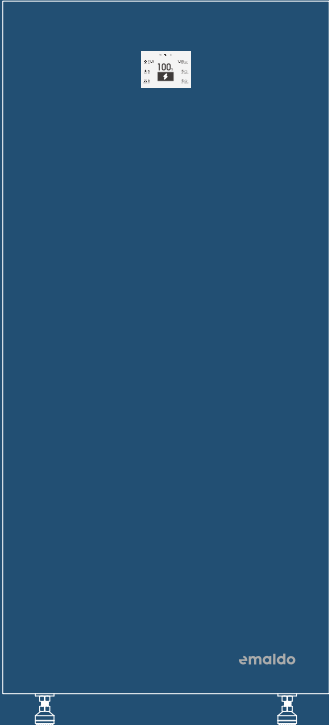


Full Installation Manual

Emaldo® Power Core



emaldo



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-  Safety information
-  Product information
-  Installation
-  Setup
-  Operations and maintenance

Safety

This guidance is exclusively intended for individuals with a professional background, possessing a thorough understanding of local regulations, standards, and electrical systems. It is imperative that users have received formal professional training and are well-versed in the pertinent knowledge related to this product.

The Emaldo® Power Core has been meticulously crafted in adherence to stringent safety regulations and has successfully undergone rigorous testing. It is imperative to adhere to the applicable safety regulations of the installation site during the processes of installation, operation, and maintenance. Any deviation from proper operational procedures may pose a risk of electric shock, potentially leading to equipment damage and property losses.

Warning Labels



Warning



Do not dispose in trash



Handle with care



Risk of burns



Component is recyclable



EU conformity



Risk of electric shock



This way up



Importance

Disclaimer

Carefully read all safety instructions before commencing any work and strictly adhere to the rules and guidelines when working on or with the Emaldo® Power Core. Emaldo® shall not be held liable for any consequences resulting from the violation of the following instructions:

- Incorrect transportation, storage, installation or use
- Non-professional installation.
- Non-compliance with the operational instructions and safety precautions outlined in this document.
- Unauthorized modifications or removal of the software package
- Operation in extreme environments which are not allowed in this document.
- Repair, disassemble, or change the Emaldo® Power Core without authorization.
- Damages due to force majeure, such as, but not limited to; lightning, earthquakes, fire, and storms.
- Warranty expiration.





General safety

- This product is not suitable for life support equipment or medical equipment.
- Only utilize components or accessories that are either produced by Emaldo® or recommended by our authorized partners.
- Do not attempt to install the equipment in the presence of any damage.

Personal safety

- Heavy lifting is involved. Ensure that more than one person is present during the lifting process, or use appropriate lifting equipment.
- Use safety equipment, such as safety glasses, protective devices, steel-toed safety boots and helmets.
- Adhere to standard safety measures, including the removal of all jewelry, the utilization of insulation tools, and wearing non-conducting clothing.
- Ensure that children, pets, and other animals are kept at a safe distance from the energy storage system, photovoltaic array, and power grid modules.
- Using the equipment in a manner not specified by the manufacturer may compromise the protection provided by the equipment.

Product safety

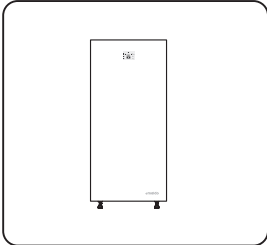
-  • Use HVDC isolators per regulations. Turn off the energy storage system 5 mins before installation for safety.
-  • Disconnect all power supplies before maintenance. Avoid opening the upper right-side compartment and pulling AC/DC cables during system operation.
-  • Cabinet becomes hot during operation; refrain from opening or touching internal parts. Allow adequate cooling time before conducting maintenance on the system.
-  • Avoid installing or using the system in wet or moist environments, or areas with corrosive gases or liquids.
- Avoid storing flammable and explosive items or equipment in the same room.
- Verify that the AC cable, DC cable, and ground cable dimensions comply with local specifications.
- Strictly adhere to spacing requirements. Maintain open vents and ensure smooth air circulation around the equipment.
- Do not disassemble or modify the Emaldo® 3-in-1 inverter, Emaldo® Power Boxes, or any other system component.
- Verify that the proposed photovoltaic array's output voltage is below the system's maximum rated input voltage to prevent potential damage and maintain warranty validity.
- Solar modules must have an IEC61730 A rating.
- Make sure that the installation location complies with spacing requirements.
- Do not charge the batteries if in a frozen state.
- Avoid exposing the battery to high-temperature environments or near heating equipment, including sunshine, fire sources, transformers, and heaters, as overheating may lead to fire and explosion.
- Avoid exposing the battery to high-temperature environments or near heating equipment, including sunshine, fire sources, transformers, and heaters, as overheating may lead to fire and explosion.

Emergency responses

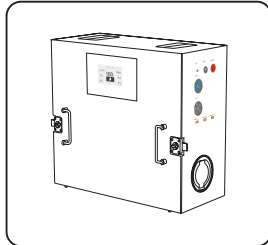
Emaldo® considers foreseeable risk scenarios and designs to minimize hazards. However, in the event of the following situation, follow the instructions below:

| Emergency | Action |
|-----------|---|
| Leakage | <p>Avoid contact with leaking liquid or gas. If you come into contact with leaking electrolyte, follow the instructions below immediately:</p> <ul style="list-style-type: none">- Inhalation: Evacuate the contaminated area and seek medical help.- Eye contact: Rinse eyes with flowing water for 15 minutes and seek medical help.- Skin contact: Rinse the affected area thoroughly with soap and water and seek medical help.- Ingestion: Induce vomiting and seek medical help. |
| Fire | <p>Emaldo® Power Core systems are very unlikely to ignite spontaneously. In the event of a fire, do not attempt to extinguish it; instead, evacuate people immediately.</p> |
| Liquide | <p>If the Emaldo® Power Core is flooded or submerged, refrain from accessing it. Contact Emaldo® promptly for technical assistance.</p> |
| Damage | <p>Damaged systems pose a risk and require special attention. They are no longer suitable for use and may pose a danger. If the Emaldo® Power Core is damaged, discontinue use and promptly contact Growatt or the distributor.</p> |

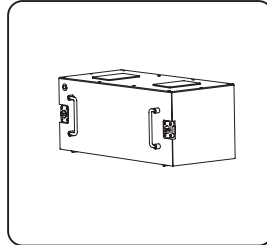
Included



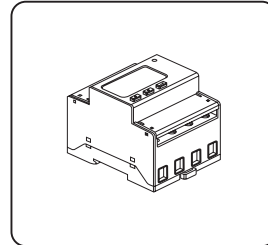
Emaldo® Cabinet x 1



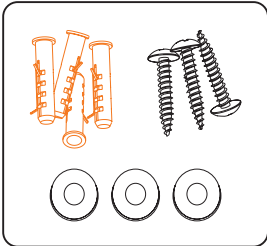
Emaldo® 3-in-1 Inverter



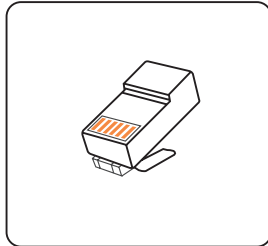
Emaldo® Power Box (Battery)



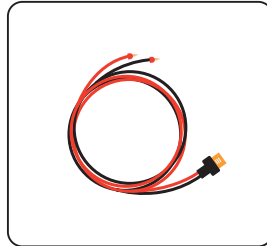
Smart Meter x 1



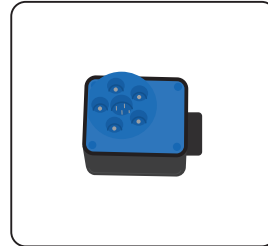
Installation Kit x 1



COM Connector x 2



MPPT Cable x 3



Main AC Connector x 1



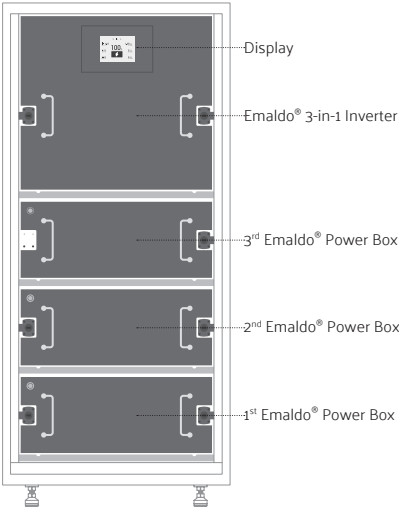
Not Included: RCD 40A 30mA Type A

Tools required

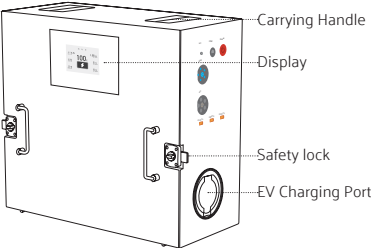
| | | | | |
|--|--|---|--|--|
|  <p>Safety glasses</p> |  <p>Safety shoes</p> |  <p>Safety gloves</p> |  <p>Dust mask</p> |  <p>Crystal head wire crimper</p> |
|  <p>Diagonal pliers</p> |  <p>Wire stripper</p> |  <p>Impact drill</p> |  <p>Heat gun</p> |  <p>DC terminal tool</p> |
|  <p>Marker</p> |  <p>Spirit level</p> |  <p>Heat shrink tube</p> |  <p>Rubber hammer</p> |  <p>Vacuum cleaner</p> |
|  <p>Multimeter</p> |  <p>Zip ties</p> |  <p>Torque wrench</p> | | |

Overview

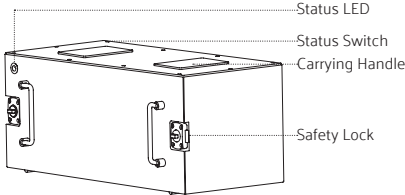
Emaldo® Power Core



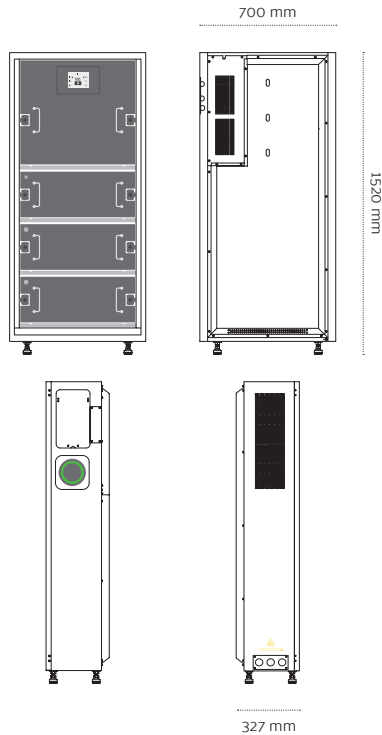
Emaldo® 3-in-1 Inverter



Emaldo® Power Box (Battery)



Appearance & Product Specifications



| Cabinet | Specification |
|---------------------------|---|
| Gross Weight (kg) | 71 kg |
| Net Weight (kg) | 58,5 kg |
| Dimensions (W x H x D mm) | 700 x 1520 x 327 mm |
| Colours | Glacial White Rune Grey Nordic Pine Green |

| Inverter | Specification |
|---------------------------|--------------------|
| Gross Weight (kg) | 52,5 kg |
| Net Weight (kg) | 48,8 kg |
| Dimensions (W x H x D mm) | 590 x 278 x 547 mm |

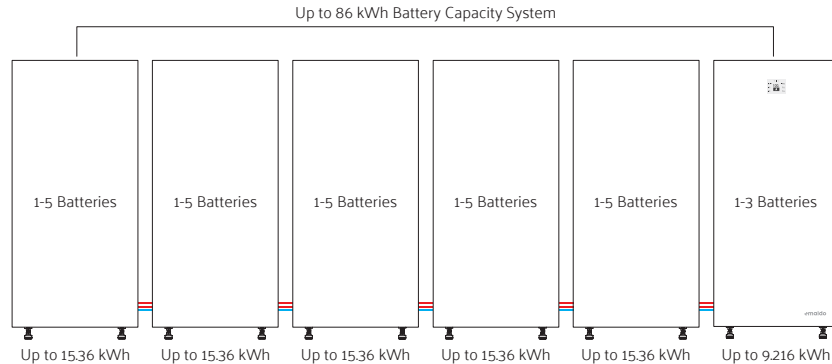
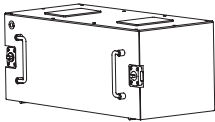
| Battery | Specification |
|---------------------------|--------------------|
| Gross Weight (kg) | 36 kg |
| Net Weight (kg) | 34,9 kg |
| Dimensions (W x H x D mm) | 592 x 262 x 240 mm |

Optional Battery Expansion

The Emaldo® Power Core's battery storage capacity is extendable to a maximum of 86 kWh. This expansion is achieved by integrating up to five battery expansion cabinets, each accommodating up to five Emaldo® Power Boxes (batteries) into the system.

| Specification | Emaldo® Power Core | Expansion Cabinet x 1 | Expansion Cabinet x 2 | Expansion Cabinet x 3 | Expansion Cabinet x 4 | Expansion Cabinet x 5 |
|---|--------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Battery Capacity (max) | 9.216 kWh | 24.576 kWh | 39.936 kWh | 55.296 kWh | 70.656 kWh | 86 kWh |
| Installation Space Required (horizontal wall space) | 170 cm | 290 cm | 410 cm | 530 cm | 650 cm | 770 cm |

| Battery | Specification |
|----------|---------------|
| Capacity | 3073Wh |





Technical Specifications

| AC input | Specification |
|-----------------------|---------------|
| Rated Input Power | 10800VA |
| Rated Input Current | 3 x 15.6A |
| Rated Input Voltage | 400/230Vac |
| Rated Input Frequency | 50/60Hz |
| Max Input Current | 3 x 15,8A |

| AC Output (Off-grid) | Specification |
|-----------------------------|-----------------|
| Rated Output Apparent Power | 10800VA |
| Rated Output Current | 3 x 15,6A |
| Max Output Current | 3 x 15,8A |
| Rated Output Voltage | 400/230Vac |
| Rated Output Frequency | 50/60 (± 0.5)Hz |

| AC Output (On-grid) | Specification |
|-----------------------------|-----------------|
| Rated Output Apparent Power | 10800VA |
| Rated Output Current | 3 x 15,6A |
| Rated Output Voltage | 400/230Vac |
| Rated Output Frequency | 50/60Hz |
| Max Output Current | 3 x 15,8A |
| Max Power Factor | 0.8i...1...0.8c |
| THCv | <3% |

| PV Input | Specification |
|---------------------------------|---------------|
| Max Input Power | 10800W |
| Max Input Open-circuit Voltage | 550Vdc |
| MPPT Voltage Range | 90-500Vdc |
| Start-up Voltage | 100Vdc |
| Max Input Current | 3 x 13A |
| Max Short-circuit Input Current | 3 x 18A |
| MPPT Input String Number | 3 |

| EV Output | Specification |
|----------------------|-----------------------|
| Rated Output Power | 10800W |
| Rated Output Current | 3 x 15.6A |
| Rated Output Voltage | 400/230Vac |
| Interface Type | IEC Type2 (IEC62169) |
| Leakage Protection | Integrated (external) |

| Battery | Specification |
|--------------------------------|-----------------------------|
| Battery Type | LFP (LiFePO4) |
| Battery Capacity (per battery) | 3072 Wh |
| Rated Battery Voltage | 51.2V |
| Battery Voltage Range | 40V-58.8V |
| Max Charging Current | 100A (based on battery qty) |
| Max Discharging Current | 180A (based on battery qty) |

| Efficiency | Specification |
|---------------------|---------------|
| Max Efficiency | 97.00% |
| European Efficiency | 96.00% |

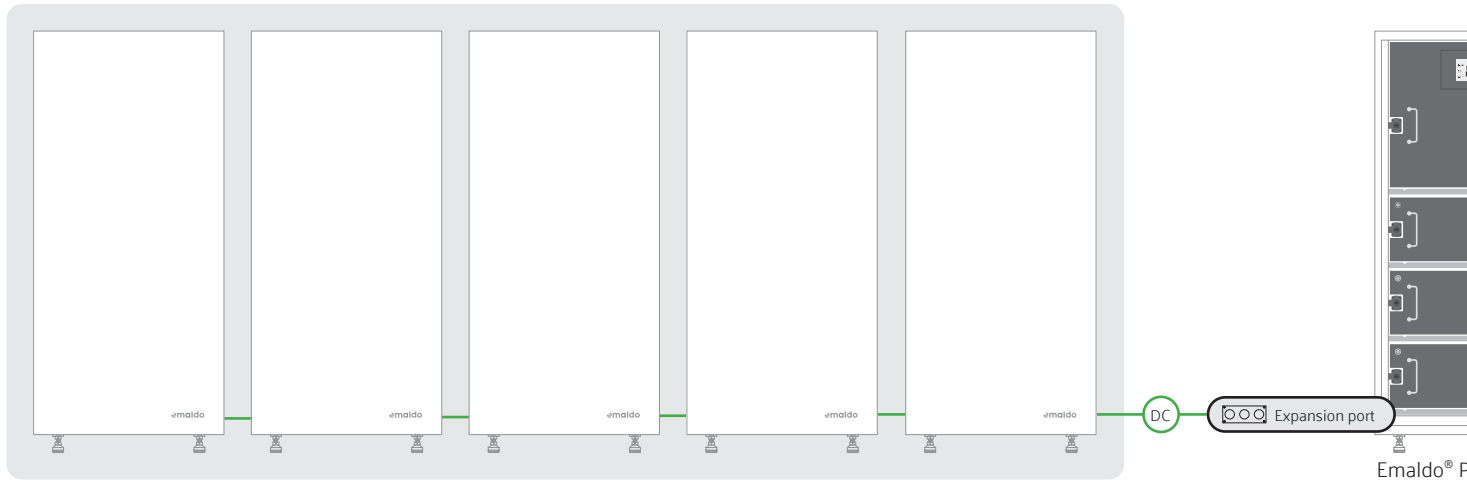
| Protection | Specification |
|---|---------------|
| Anti-islanding Protection | Integrated |
| Reverse Connection Protection of Photovoltaic Input | Integrated |
| Insulation Impedance Detection | Integrated |
| Residual Current Detection | Integrated |
| Output Overcurrent Protection | Integrated |
| Output Short Circuit Protection | Integrated |
| Output Overvoltage Protection | Integrated |

| General | Specification |
|---------------------------|--------------------------------|
| Operating Temperature | -20-50 °C |
| Relative Humidity | 0-95% |
| Altitude | 2000m |
| Cooling | Forced air |
| Noise | <50dB |
| Display | E-INK + LED + APP |
| Communication | RS485 (Smart Meter) |
| 4G/WiFi/Bluetooth | YES/YES/YES |
| Topology | Transformerless |
| Weight (kg) | 215 kg (including 3 batteries) |
| Dimensions (W x H x D mm) | 700 x 1520 x 327 mm |

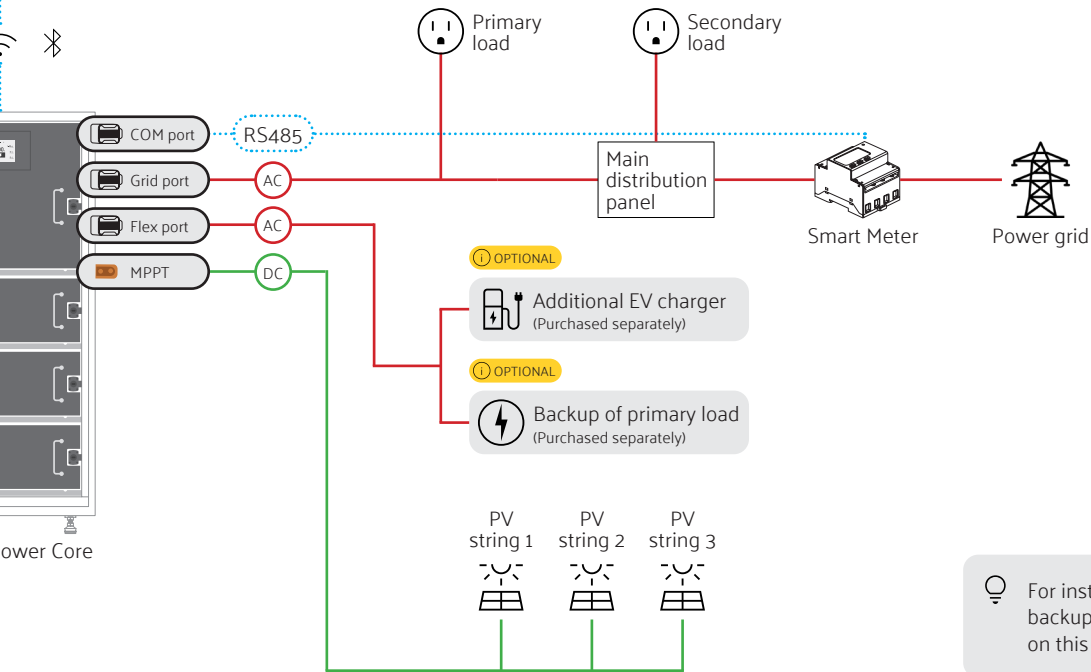
Application Diagram

① OPTIONAL

Battery capacity expansion
(Purchased separately)



Emaldo® app &
Emaldo® installer platform



For instruction on installations with power backup, please follow our separate manual on this subject.

Before Installation

Avoid

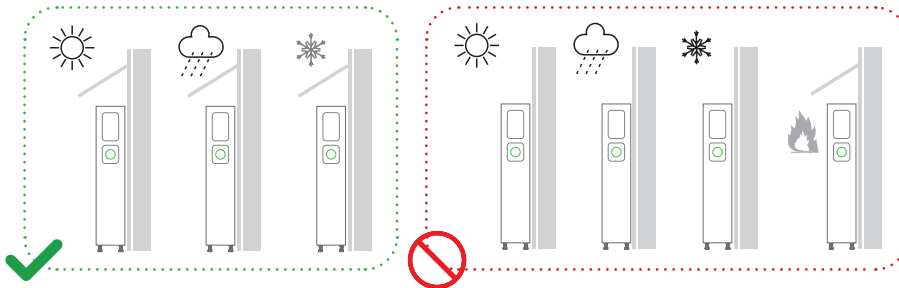
- Avoid installing the Emaldo® Power Core in any other way than upright vertically as illustrated in this manual.
- Avoid installing the Emaldo® Power Core in areas containing flammable or explosive materials.

Pay special attention to

- Install the Emaldo® Power Core in a secure location with restricted access for children and pets to minimize potential risks.
- Ensure the Emaldo® Power Core is securely positioned on a stable surface and properly anchored to the wall to prevent any possibility of toppling.

When installing outdoors

- Do not install the Emaldo® Power Core outdoors without protective covering. When installing it in an outdoor environment, ensure placement under a roof or eaves, preventing direct exposure to rain and splashing.
- The Emaldo® Power Core is designed to operate within ambient temperatures ranging from -20°C to 50°C . However, system efficiency may be adversely affected in sub-zero temperatures and when ambient temperatures exceed 45°C .




Check delivered parts


Before proceeding to unpack the Emaldo® Power Core, carefully inspect the outer packaging for visible damage, such as holes, cracks, or any indicators of potential internal issues. Confirm that the energy storage system's model matches the expected one. In case of any packaging anomalies or model discrepancies, refrain from opening the package and promptly contact your dealer.

Upon unpacking the equipment, conduct a thorough check to ensure all delivered components are present and free from any noticeable external damage. Should there be any missing items or signs of damage, please notify your dealer immediately.

Installation of the cabinet

The Emaldo® Power Core is IP54 rated and can be installed both indoors and outdoors. Outdoor installation should be done under eaves overhang.

 Prior to drilling holes, it is imperative to exercise caution and avoid potential interference with concealed water supply lines and electrical power lines within the wall.

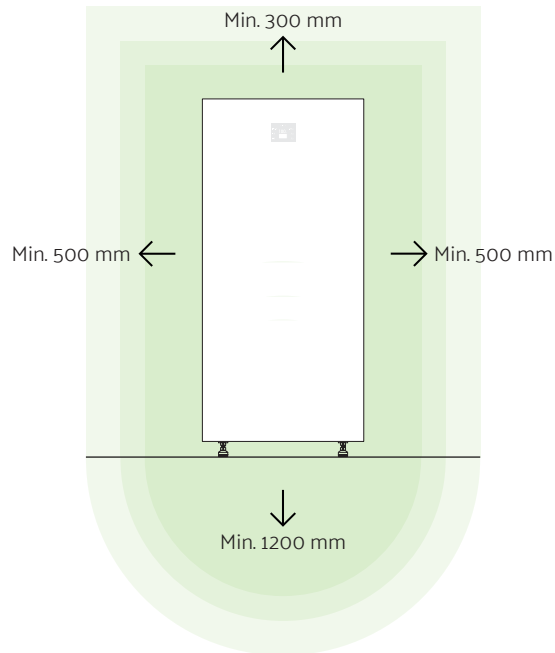
 It is imperative to use appropriate anchors when securing the Emaldo® Power Core cabinet to the wall. Emaldo will not assume any responsibility for any damage resulting from the use of unsuitable anchors for product installation.

Emaldo supplies components and parts, but the diverse nature of installation surfaces may necessitate the use of additional components and parts.

Step 1

- Make sure the installation location allows for enough free space on all sides of the Emaldo® Power Core, except for the backside, which must be secured to the wall.

💡 For installations without battery expansion cabinets, it is advisable to position the Emaldo® Power Core to the right side on the designated installation point. This arrangement facilitates potential expansion of battery cabinets on the left side in the future.



Step 2

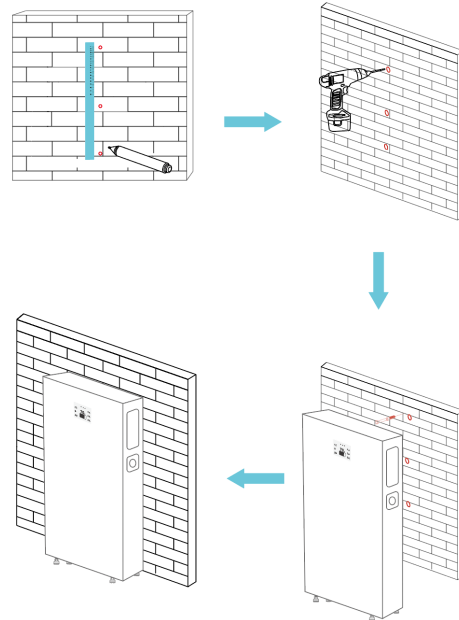
- Use a line marking template to determine drilling locations.
- Level the hole location with a leveling instrument.
- Mark the locations with a marker.

Step 3

- Use an electric drill to create installation holes for M6 bolts at the marked points.

Step 4

- Align the cabinet with the installation holes.
- Tap expansion bolts into the wall holes with a hammer.
- Install nuts, including flat washers.
- Tighten the nuts securely using a wrench.



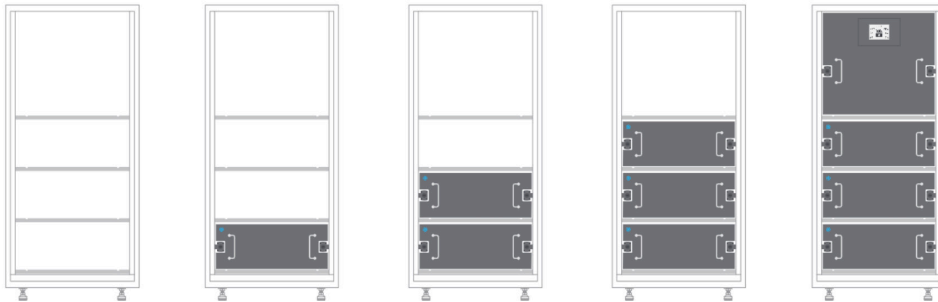
Installation of inverter and batteries

Step 1

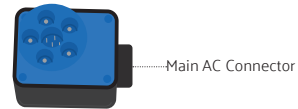
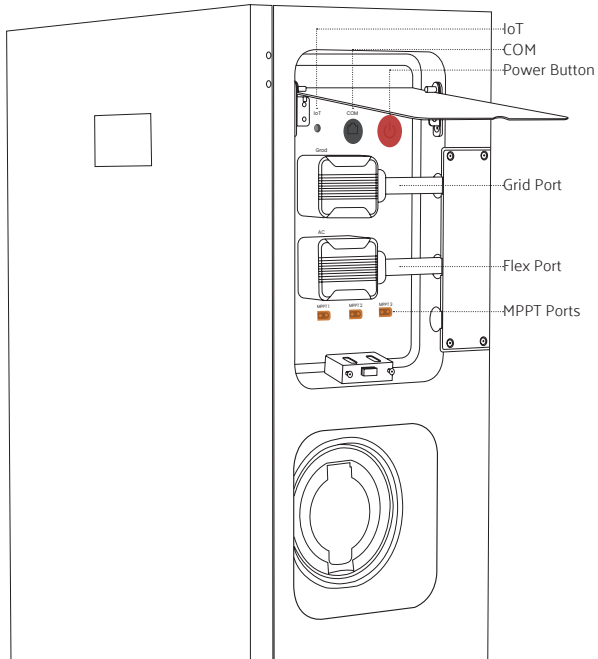
- Securely grip the top handle of the Power Box using both hands or with assistance from two individuals.
- Align the Power Box with the SlideON guide rails in cabinet, release the handle, make any necessary adjustments to its position push it in place.
- Turn the safety lock on both sides of the Battery Box to secure it in place.

Step 2

- Proceed to install the second and third Power Box and the 3-in-1 inverter, in a bottom-up sequence, using the same approach.



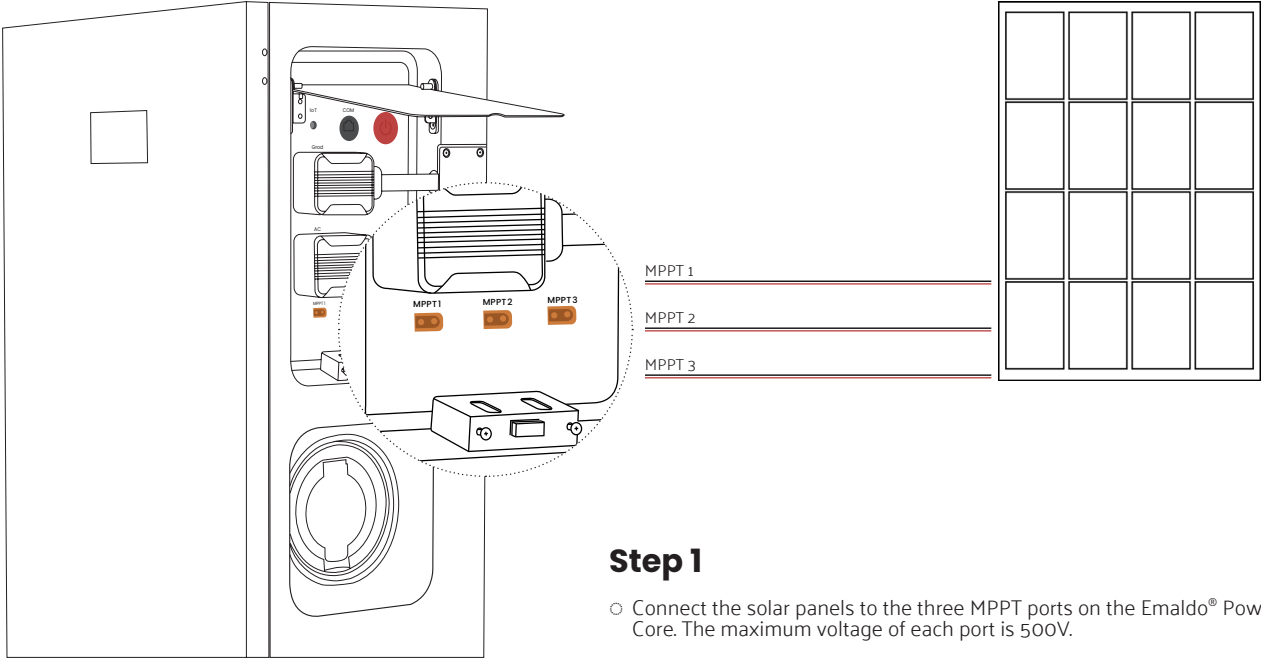
Electrical connection



Step 1

- Connect the Main AC connector to the Grid Port on the Emaldo® Power Core.
- Ensure the connection is done to a RCD of at least 40A 30mA Type A.

Photovoltaic array connection

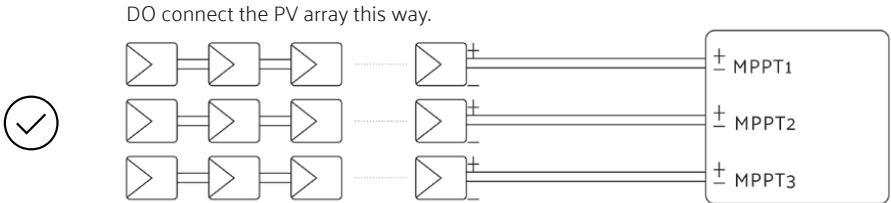
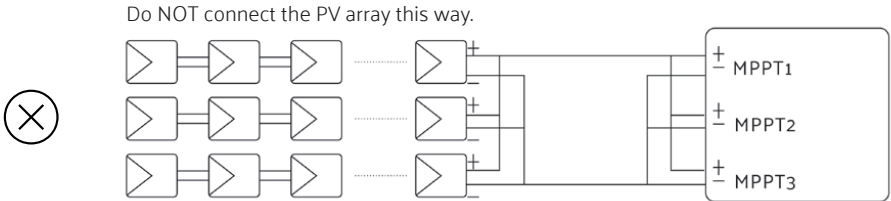


Step 1

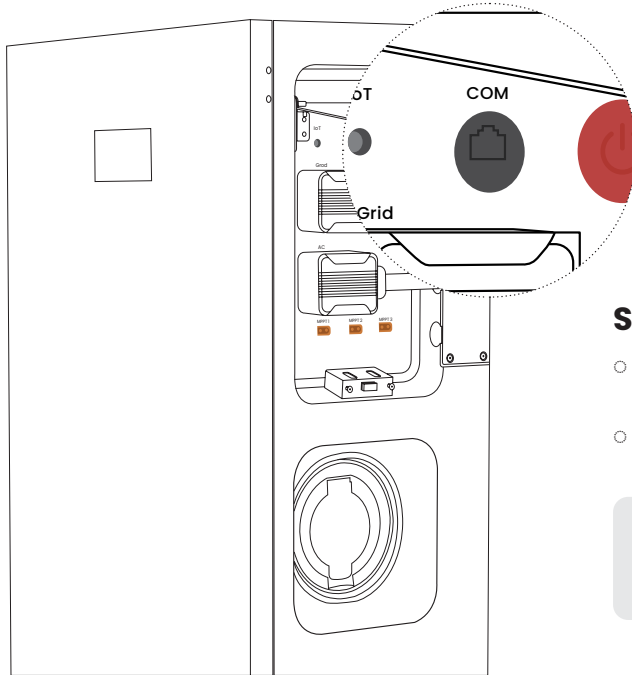
- Connect the solar panels to the three MPPT ports on the Emaldo® Power Core. The maximum voltage of each port is 500V.

Note

Please ensure to connect the PV array according to the below illustration.



Installation of smart meter



| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|------|------|---|---|
| - | - | - | - | 485A | 485B | - | - |

Step 1

- Wire the RJ-45 Ethernet cable according to the illustration. Make sure the wiring is done the same way in the RJ-45 plugs in both ends of the cable.
- Connect the cable to the COM port in the Emaldo® Power Core and to the smart meter.

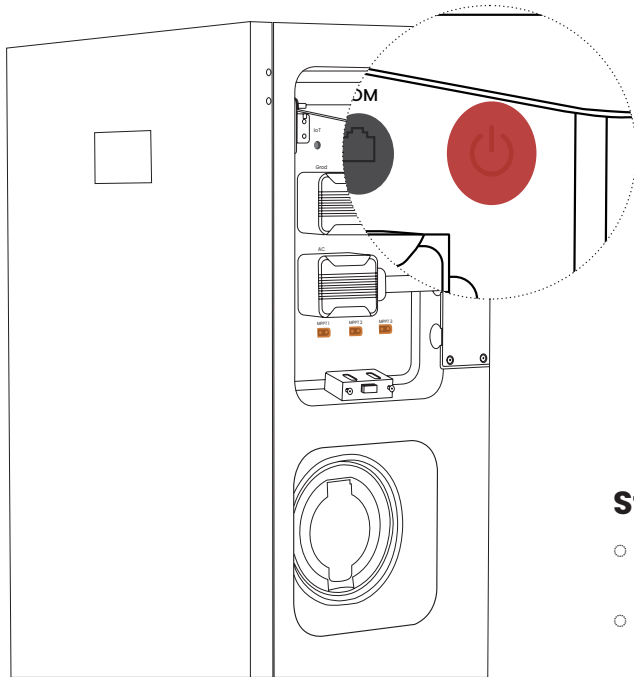


Smart meter wires go to terminals 5 and 6. This is true using both a directly wired smart meter and a CT smart meter. For more information refer to the user manual that comes with the smart meter.


Inspection of installation

- The installation of the Emaldo® Power Core has been executed with precision and security.
- The cable layout has been meticulously planned to align with the specific requirements and preferences of the end-user.
- Ensure consistent application of cable ties, cutting them uniformly to eliminate any sharp corners or edges.
- All power to the Emaldo® Power Core and its associated connections has been deactivated.
- The AC cable, Grid cable, and smart meter COM cable have been securely and reliably connected in accordance with proper protocols.
- The installation space has been appropriately organized, maintaining a clean and orderly environment with no remnants from the installation process.
- Clear information has been provided to the end-user regarding how to reach out for support and service.

Power on



Step 1

- Open the cover plate on the right side of Emaldo® Power Core, and press and hold the power button until the display lights up.
- Wait for the Emaldo® Power Core to initiate. You can continue setting up the Emaldo® Power Core from the Emaldo® app, when you see this icon on the display .

Setup in the Emaldo® app

Step 1

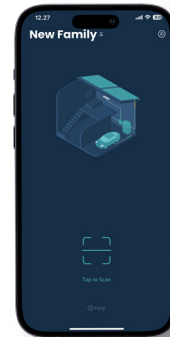
- Download the Emaldo® app by scanning the Download QR code above with the camera on your phone, or download it from either Google Play or the App Store.
- Create an account.
- Scan the Activation code above or on the front of the Emaldo® 3-in-1 inverter to connect the Emaldo® Power Core.



Download App

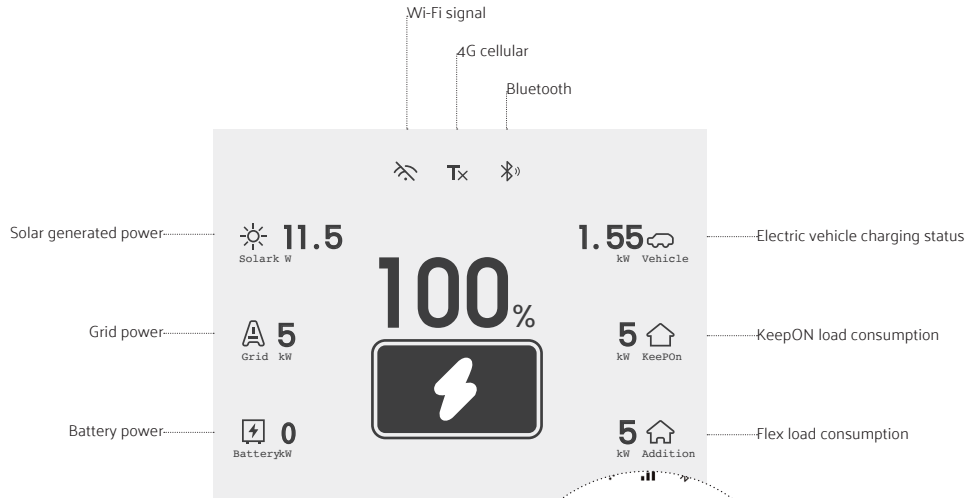


Activate



To learn more about the setup and settings of the Emaldo® Power Core, please refer to the App User Guide which is included with the product.

Reading the display



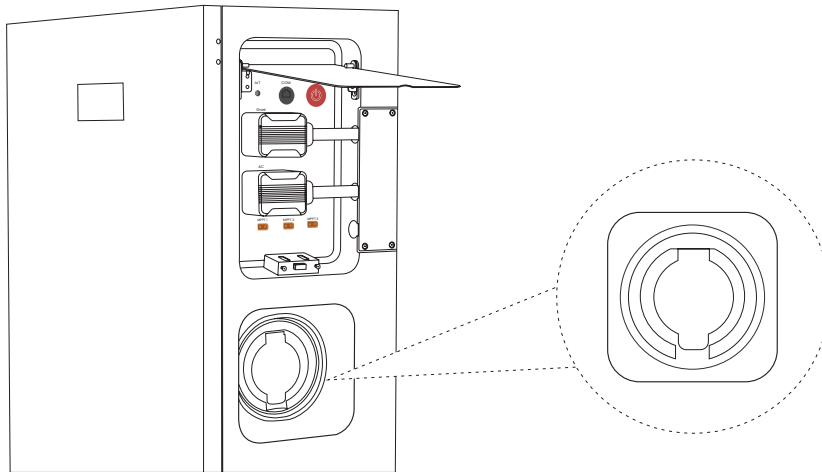
Battery status



Battery status icon will change to display system codes when applicable. See page XX for code explanations.



Electric vehicle charging



Step 1

- Open the cover and insert the charging cable.

Step 2

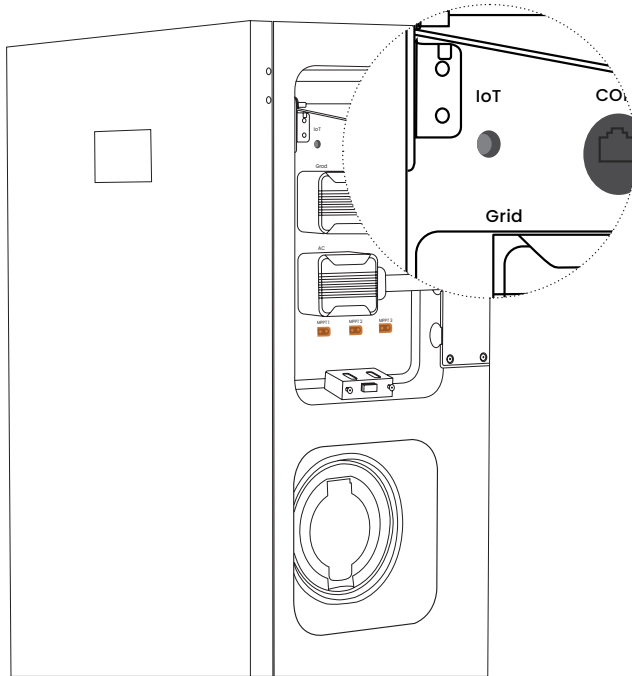
- Insert the other end of the charging cable in charging port of your electric vehicle.

Step 3

- The status ring on the Emaldo® Power Core illuminates in blue during the charging process.

💡 The length of the included charging cable is 5 meters.

Trouble shooting



Restart IoT

- Press the IoT button briefly; a successful restart of the IoT is indicated by the audible confirmation of a "beep" sound.

Factory reset IoT

- Hold down the IoT button for at least 10 seconds; upon hearing three consecutive "beep" sounds, the IoT device will confirm successful restoration to factory settings.



Following the IoT reset, all configurations for the Emaldo® Power Core will be erased and reset to factory defaults.

System codes

| Code | Description | Effected module | Recommended solution |
|------|---|-----------------|---|
| 1 | Low Battery Protection | IoT | Charge batteries as soon as possible |
| 101 | MCU Master Update Failure | IoT | Charge batteries and restart the inverter |
| 102 | MCU Slave Update Failure | IoT | Charge batteries and restart the inverter |
| 103 | Cabinet Update Failure | IoT | Charge batteries and restart the inverter |
| 104 | Inverter Update Failure | IoT | Charge batteries and restart the inverter |
| 105 | BMS 106 Update Failure | IoT | Charge batteries and restart the inverter |
| 106 | BMS Pack Update Failure | IoT | Charge batteries and restart the inverter |
| 107 | EV Update Failure | IoT | Charge batteries and restart the inverter |
| 1001 | Inverter - Battery Undervoltage | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1002 | Inverter - Battery Overtemperature | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1003 | Inverter - Battery Overcurrent | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1004 | Inverter - Battery Hardware overcurrent | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1005 | Inverter - Booster Radiator 1 Overtemperature | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1006 | Inverter - Booster Radiator 2 Overtemperature | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1007 | Inverter - Booster Radiator 3 Overtemperature | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1008 | Inverter - Booster Radiator 1 Fault | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1009 | Inverter - Booster Radiator 2 Fault | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1010 | Inverter - Booster Radiator 3 Fault | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1100 | Inverter Output Overvoltage | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1101 | Inverter Output Undervoltage | Inverter | Restart the inverter; if the issue persists, contact tech support |

System codes

| Code | Description | Effected module | Recommended solution |
|------|---|-----------------|---|
| 1103 | High DC Component of Inverter Current | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1104 | Inverter Current Overcurrent | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1105 | Inverter Current Hardware Overcurrent | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1106 | Inverter Output Short Circuit | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1107 | 105% Overloaded | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1108 | 120% Overloaded | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1109 | 200% Overloaded | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1110 | Inverter Radiator Overtemperature | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1111 | Inverter Radiator Failure | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1200 | Instantaneous Overvoltage of Power Grid | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1201 | Grid RMS Overvoltage Level 1 | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1202 | Grid RMS Overvoltage Level 2 | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1203 | Grid RMS Undervoltage Level 1 | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1204 | Grid RMS Undervoltage Level 2 | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1205 | Instantaneous Undervoltage of Grid | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1206 | Grid Frequency: Overfrequency Level 1 | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1207 | Grid Frequency: Overfrequency Level 2 | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1208 | Grid Frequency: Underfrequency level 1 | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1209 | Grid Frequency: Underfrequency level 2 | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1210 | Abnormal Grid Envelope | Inverter | Restart the inverter; if the issue persists, contact tech support |

System codes

| Code | Description | Effected module | Recommended solution |
|------|---|-----------------|---|
| 1211 | Abnormal Phase Locking of Grid | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1212 | Abnormal Detection of Stuck Buffer Relay | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1213 | Abnormal Detection of Main Relay Sticking | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1300 | Abnormal Inverter Insulation Detection | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1301 | Abnormal Inverter Leakage Detection | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1303 | Inverter Bus Overvoltage Level 1 | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1304 | Inverter Bus Overvoltage Level 2 | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1305 | Inverter Bus Undervoltage Level 1 | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1306 | Inverter Bus Undervoltage Level 2 | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1307 | Inverter Bus Fault | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1308 | Inverter Power Down | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1309 | Transformer Overtemperature | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1310 | Transformer Fault | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1311 | Inverter Communication Fault | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1312 | Inverter Fans Fault | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1400 | PV Overvoltage | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1402 | PV Overcurrent | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1403 | PV Radiator 1 Overtemperature | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1404 | PV Radiator 1 Fault | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 1600 | Inverter Enabling Hardware Failure | Inverter | Restart the inverter; if the issue persists, contact tech support |

System codes

| Code | Description | Effected module | Recommended solution |
|------|---|------------------|---|
| 1601 | Communication Fault between DC and Inverter | Inverter | Restart the inverter; if the issue persists, contact tech support |
| 2000 | EV Leakage Protection | EV Charging Port | Reconnect charger; if the issue persists, contact tech support |
| 2001 | EV Overvoltage Protection | EV Charging Port | Reconnect charger; if the issue persists, contact tech support |
| 2002 | EV Undervoltage Protection | EV Charging Port | Reconnect charger; if the issue persists, contact tech support |
| 2003 | EV Overcurrent Protection | EV Charging Port | Reconnect charger; if the issue persists, contact tech support |
| 2004 | EV Overheating Protection | EV Charging Port | Reconnect charger; if the issue persists, contact tech support |
| 2005 | EV Leakage Self-test Exception | EV Charging Port | Reconnect charger; if the issue persists, contact tech support |
| 2006 | EV Ground Wire Missing | EV Charging Port | Reconnect charger; if the issue persists, contact tech support |
| 2007 | EV CP Level Exception | EV Charging Port | Reconnect charger; if the issue persists, contact tech support |
| 2008 | EV Relay Abnormal | EV Charging Port | Reconnect charger; if the issue persists, contact tech support |
| 2009 | EV Auxiliary Processor Exception | EV Charging Port | Reconnect charger; if the issue persists, contact tech support |
| 2010 | EV System 5v Exception | EV Charging Port | Reconnect charger; if the issue persists, contact tech support |
| 2011 | EV Connector Communication Failure | EV Charging Port | Reconnect charger; if the issue persists, contact tech support |
| 3000 | PV overvoltage | PV | Reconnect PV cable, restart the inverter; if the issue persists, contact tech support |
| 3002 | PV overcurrent | PV | Reconnect PV cable, restart the inverter; if the issue persists, contact tech support |
| 3003 | PV radiator 1 overtemperature | PV | Reconnect PV cable, restart the inverter; if the issue persists, contact tech support |
| 3004 | PV radiator 1 fault | PV | Reconnect PV cable, restart the inverter; if the issue persists, contact tech support |
| 4000 | Cabinet Water Sensor Alarm | Cabinet | Check installation environment; if the issue persists, contact tech support |

System codes


| Code | Description | Affected module | Recommended solution |
|------|---|-----------------|---|
| 4002 | Fans in Cabinet Abnormal | Cabinet | Check installation environment; if the issue persists, contact tech support |
| 4003 | Accessories of Cabinet Communication Failure | Cabinet | Check installation environment; if the issue persists, contact tech support |
| 5002 | Battery Hardware Failure | Batteries | Contact tech support |
| 5003 | Battery Discharge High Temperature Alarm | Batteries | Contact tech support |
| 5004 | Battery Low Voltage Alarm | Batteries | Contact tech support |
| 5005 | Battery Discharge Overcurrent Alarm | Batteries | Contact tech support |
| 5006 | Battery Fet High Temperature Protection | Batteries | Contact tech support |
| 5007 | Battery Charging High Temperature Protection | Batteries | Contact tech support |
| 5008 | Battery Charging Low Temperature Protection | Batteries | Contact tech support |
| 5009 | Battery Discharging High Temperature Protection | Batteries | Contact tech support |
| 5010 | Battery Discharging Low Temperature Protection | Batteries | Contact tech support |
| 5011 | Battery Discharging Short Circuit Protection | Batteries | Contact tech support |
| 5012 | Battery Charging Overcurrent Protection | Batteries | Contact tech support |
| 5013 | Battery Low Voltage Protection | Batteries | Contact tech support |
| 5015 | Battery pack Communication Failure | Batteries | Contact tech support |
| 6000 | Offline Overload Protection | System | Restart the inverter; if the issue persists, contact tech support |
| 6001 | The SOC of Pack is too Low | System | Restart the inverter; if the issue persists, contact tech support |
| 6002 | Bus Voltage is too Low | System | Contact tech support |
| 6003 | The Temperature of the System Test is too High | System | Restart the inverter; if the issue persists, contact tech support |
| 6004 | The Temperature of the System Test is too Low | System | Restart the inverter; if the issue persists, contact tech support |


System codes

| Code | Description | Affected module | Recommended solution |
|------|---|-----------------|----------------------|
| 6005 | Wrong Number of Cabinet Indication | System | Contact tech support |
| 6006 | Battery Performance Deterioration | System | Contact tech support |
| 6007 | Inverter and L-out Wiring Error | System | Contact tech support |
| 6008 | Meter Wiring Error | System | Contact tech support |
| 6009 | gb_box_unexist_for_hard 9 | System | Contact tech support |
| 6010 | Battery in Maintenance | System | Contact tech support |
| 7000 | MCU Communication Failure | Communication | Contact tech support |
| 7001 | Three-phase Meter Communication Failure | Communication | Contact tech support |

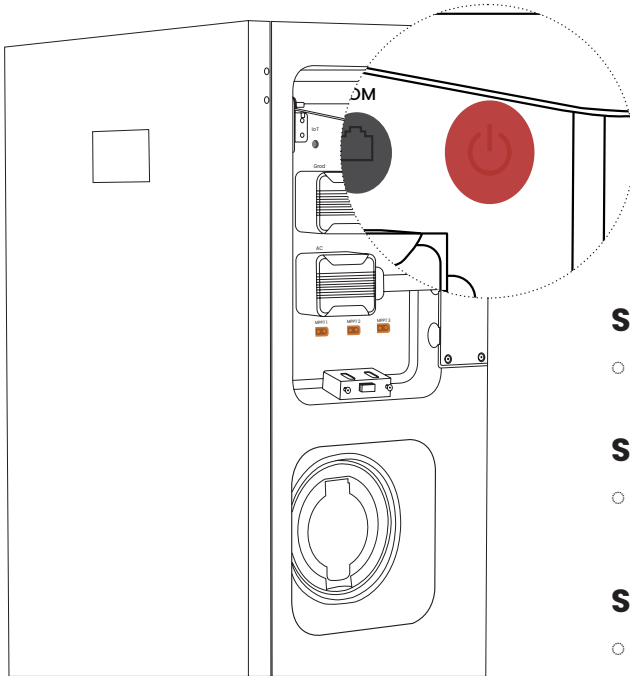
Maintenance

For sustained and optimal performance of the Emaldo® Power Core, it is advisable to follow the routine maintenance procedures outlined in this section.

 After powering down the system, residual electricity and heat may remain in the equipment, posing a risk of electric shock or burns. Therefore, wait for 5 minutes after system shutdown, wear protective gloves, ensure all indicators on the Emaldo® Power Core are off before proceeding with maintenance operations.

 While the Emaldo® Power Core is in operation, simply disconnecting the main switch doesn't fully power down the system, prohibiting maintenance operations.

Ensure complete power down



Step 1

- Briefly press the power button of the Emaldo® Power Core to power it off.

Step 2

- Disconnect the DC isolator switch between the Emaldo® Power Core and the PV string.

Step 3

- Switch the RCD (Grid, AC) circuit breaker in the main distribution panel to the OFF position.

| Task | Method | How often |
|-------------------------------|---|--|
| System cleaning | Perform routine checks on the air inlet and outlet to identify and clear any obstructions, dust, or dirt. | Every 6-12 months |
| System operation checkup | Conduct visual inspections for damage or deformation of the Emaldo® Power Core. Listen for any unusual sounds during operation. Ensure all parameters are correctly set while the system is running. | Every 6 months |
| Electrical connection checkup | Verify the cable connection for looseness or detachment. Inspect the cable for any damage, paying particular attention to the section in contact with the metal surface for signs of cuts. Ensure the unused DC input terminal and the waterproof cover of the charging base are securely closed. | First check after 6 months, then every 6-12 months hereafter |
| Grounding reliability checkup | Verify that the grounding cable is securely grounded. | First check after 6 months, then every 6-12 months hereafter |

Certifications and standards



| Compliance | Description |
|----------------------|--|
| Safety compliance | IEC62109-1:2010, IEC62109-2:2011, EMC IEC61851-21-2:20218 , IEC61000-6-1, IEC61000-6-3 |
| Battery compliance | IEC62619:2022, UN38.3, MSDS |
| Grid compliance | TRLV_TP_EN 50549_DK |
| System compliance | IEC61851-1:2017, IEC62955, IEC60529:2013, EN61984 |
| Emissions compliance | RED 2014/53/EU |

Support

| Service level | Contact | Response time |
|-------------------|--------------------|--|
| Consultation | hello@emaldo.com | Mon-Thu 9 AM - 15 PM CET Fri 9 AM - 12 Noon and 13 PM - 15 PM CET |
| Technical support | help@emaldo.com | Mon-Thu 9 AM - 15 PM CET Fri 9 AM - 12 Noon and 13 PM - 15 PM CET |
| 24/7 online help | emaldo.com/support | 24/7/365 |
| Limited warranty | emaldo.com | 10 years (6.000 cycles) |

Scan with the camera on your phone to get online help



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