LFP
Series

MG

Index

Part I - Introduction

LFP Series


Lithium-Ion LFP Battery | 12.8 V / 210 Ah
MG
Lithium-Ion LFP Battery | 25.6 V / 230 Ah
MG
Lithium-Ion LFP Battery | 25.6 V / 304 Ah
MG
IP40

Embrace Improved Capacity!

LFP 280
25.6 Vdc
7.2 kWh

NEW

LFP 304
25.6 Vdc
7.8 kWh

LFP 210 - 12V

2.7 kWh

12.8 Vdc

120 Ah

22 kg

LFP 230 - 24V

5.8 kWh

25.6 Vdc

230 Ah

41 kg

LFP 304 - 24V

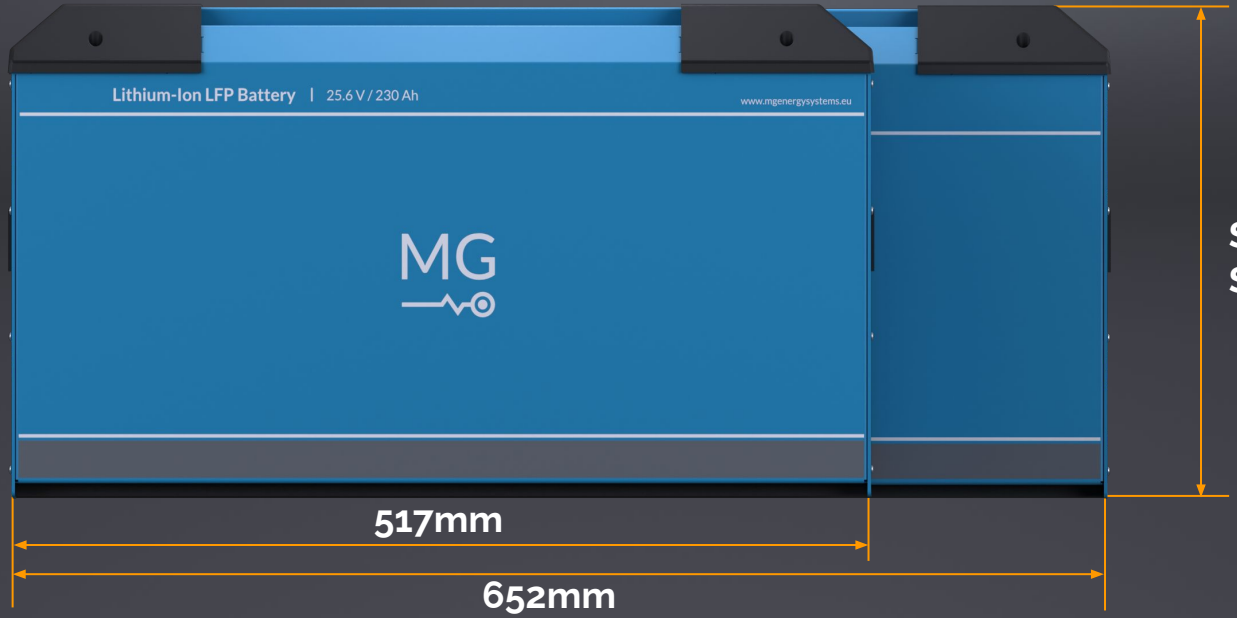
7.8 kWh

25.6 Vdc

304 Ah

54 kg

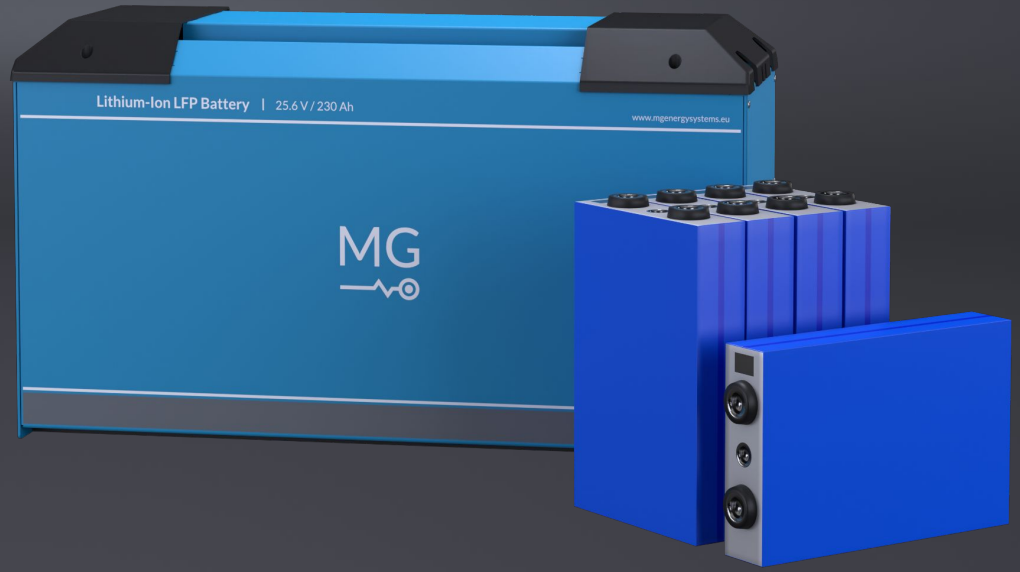
Footprint



Same height = 294mm
Same width = 193mm

LFP Series

Lithium-ion
3rd generation LiFePO4
Highest energy density
Prismatic cells



Advantages of LFP Chemistry

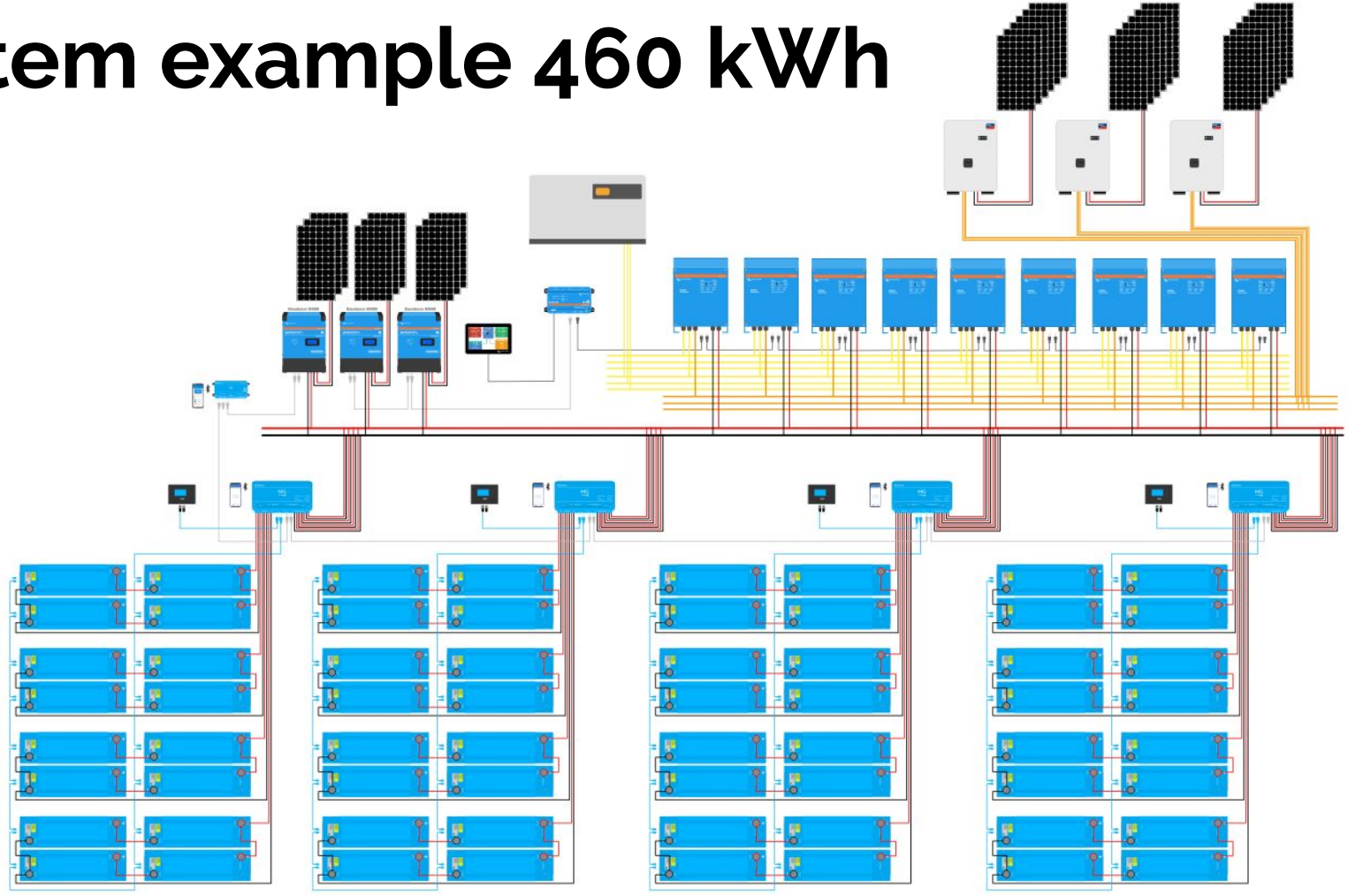
- Safer by design
- High C-Rating (charge and discharge)
- Use in high(er) ambient temperatures

Scalability

Up to 1 MWh:

- Voltage range 24 to 460 Vdc
- Unlimited parallel strings

System example 460 kWh




MG
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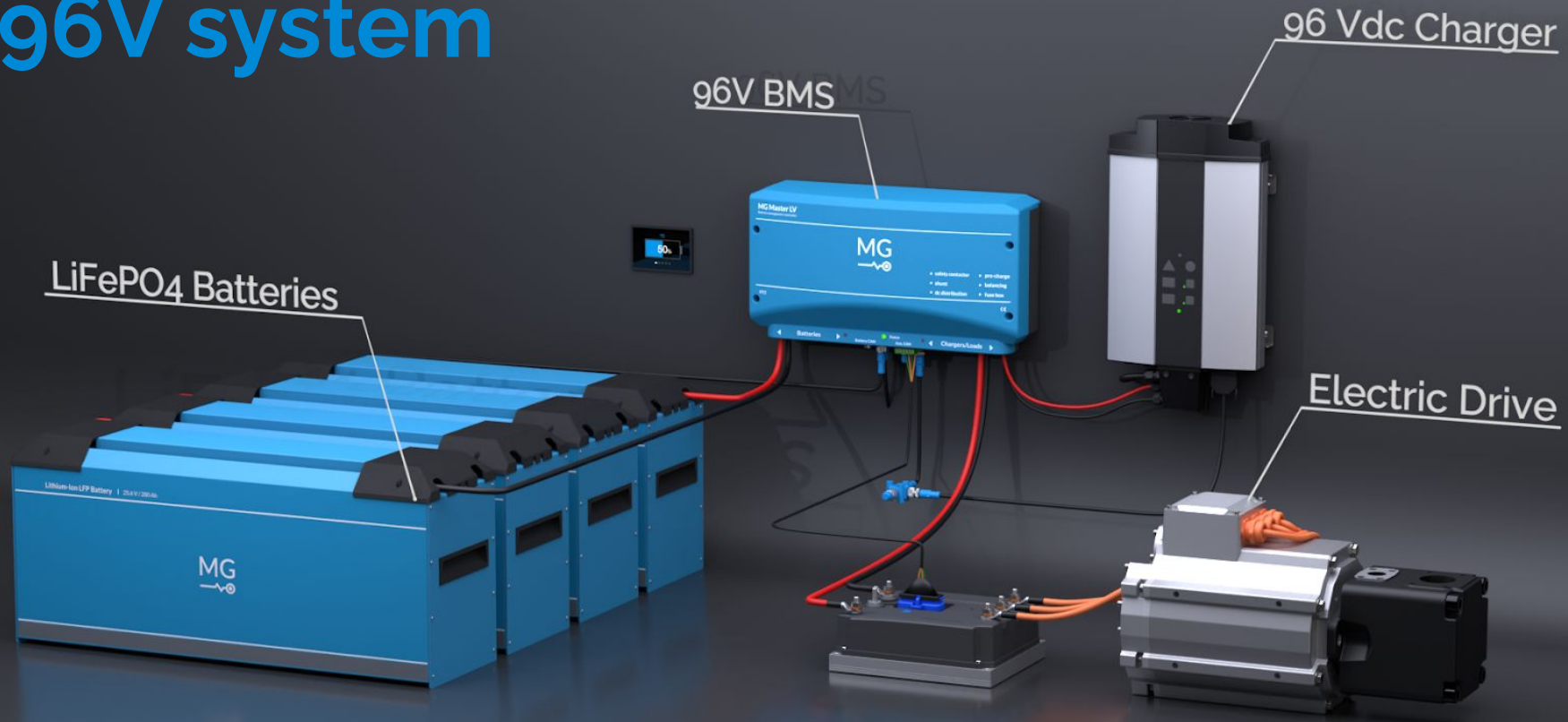
96V system


96 Vdc Charger
96V BMS
LiFePO4 Batteries
Electric Drive
MG
MG Master LV
Lithium-Ion LFP Battery

LFP modular Rack System

NEW

Modular design
Built as a kit
Module slide-in
Easy installation

Application Examples LFP

Machinery
Power Supply

Marine Recreational
Hotel load
Electric propulsion
Hybrid systems

Marine Commercial

Vehicles

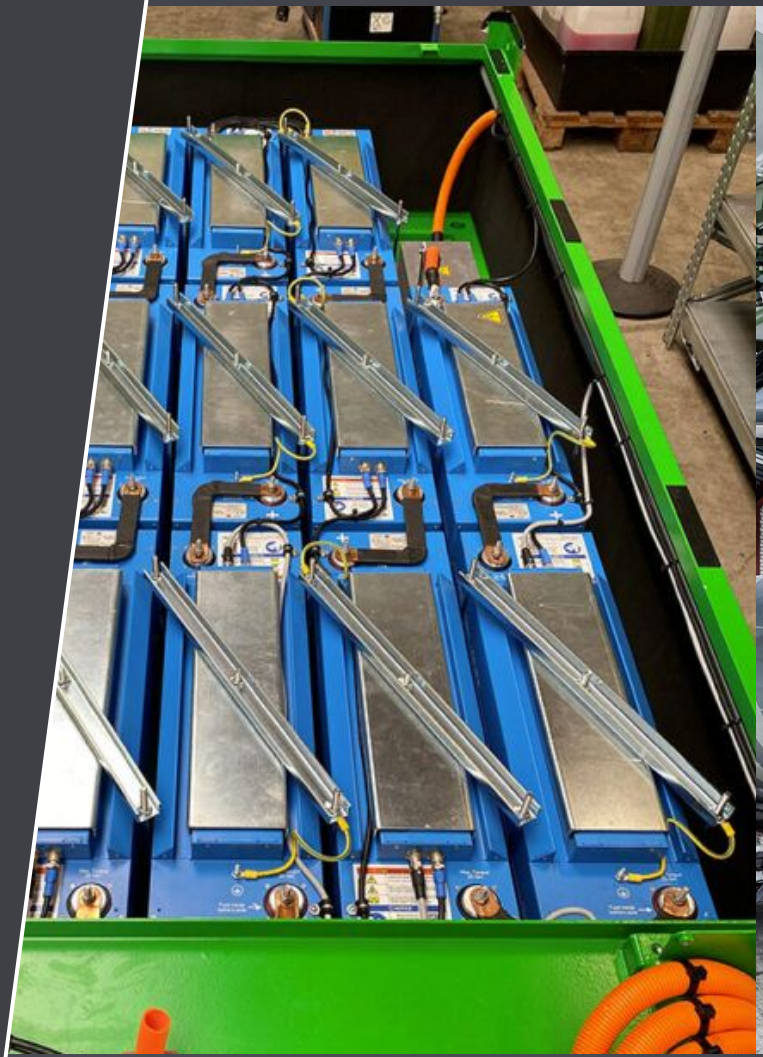
Solar backup

Application Examples LFP

Application Examples LFP

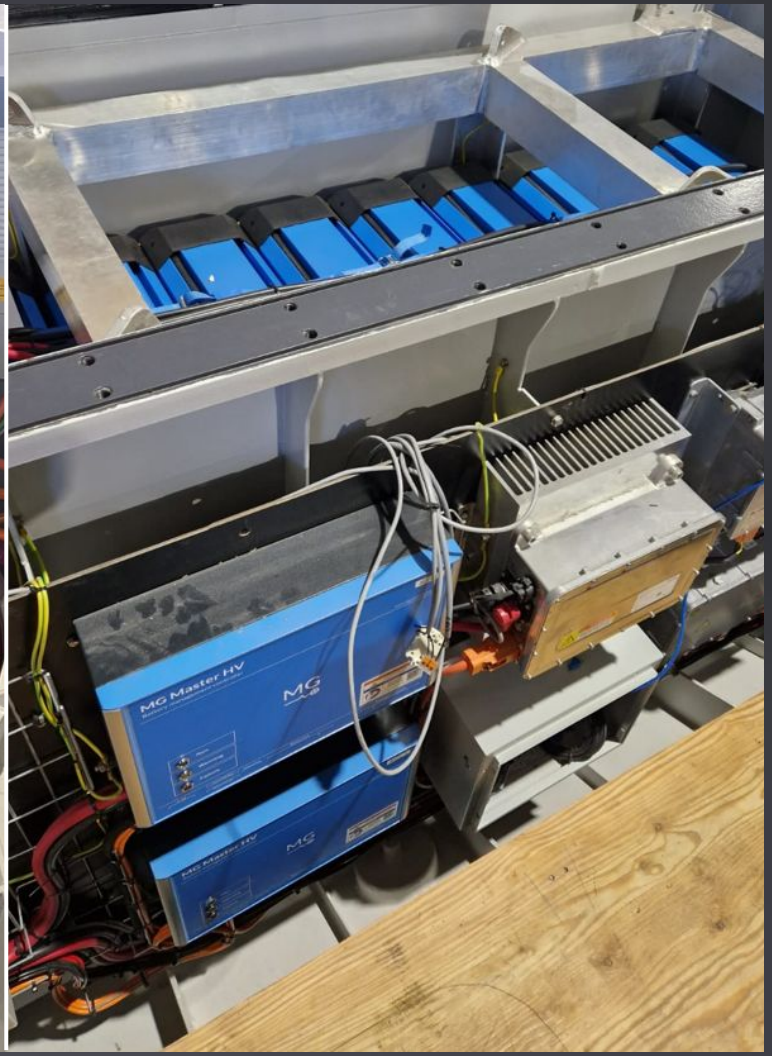
Application Examples LFP

Application Examples LFP



Application Examples LFP

Application Examples LFP



Key Specifications

Key Specifications

Certification

CESNI

IEC 62619 and 62620

*Only 280, 304 coming soon

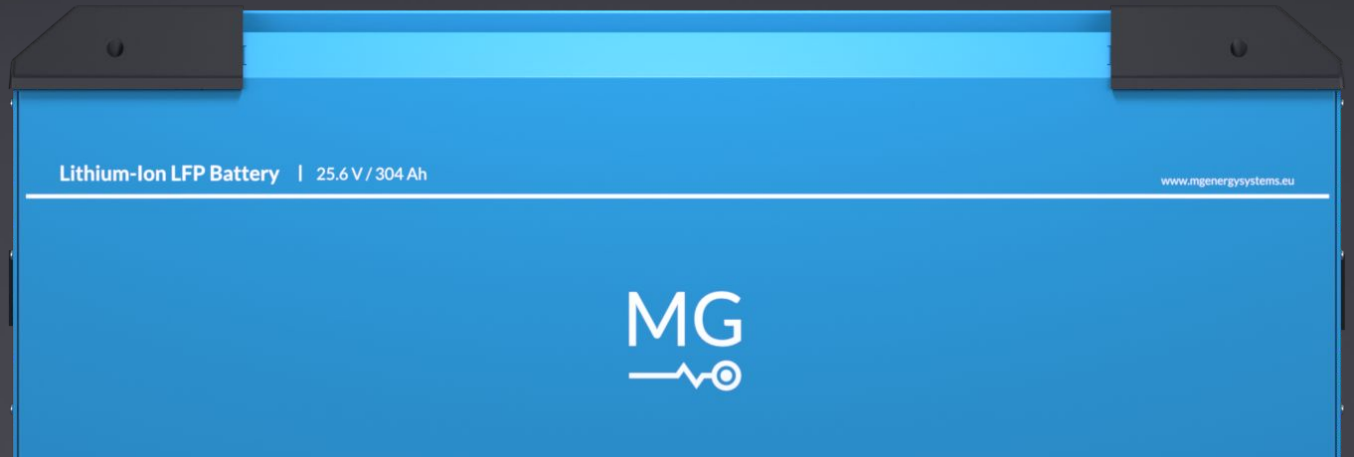
IP-Rating

IP30

Cycle Life

>4000

At 80% DOD



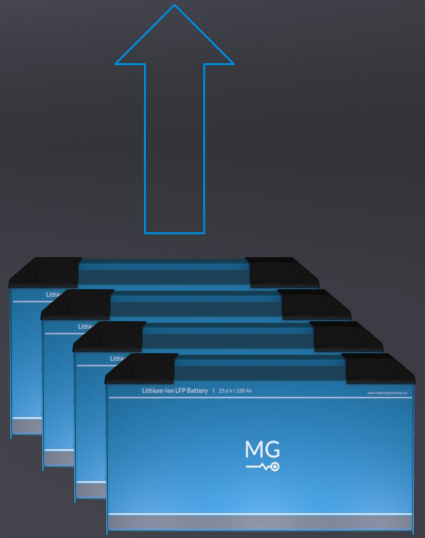
Configuration

	LFP
Series	up to **470** Vdc (304Ah) up to **96** Vdc (230Ah)
Parallel	unlimited

C-rating = $\frac{\text{kW (Power)}}{\text{kWh (Capacity)}}$

	LFP	RS
Discharge current		
- Recommended	0.5C	2C
- Cont	1.0C	
- Max	1.5C	3C
Charge current		
- Recommended	0.5C	1C
- Cont	1.0C	
- Max	1.5C	2C

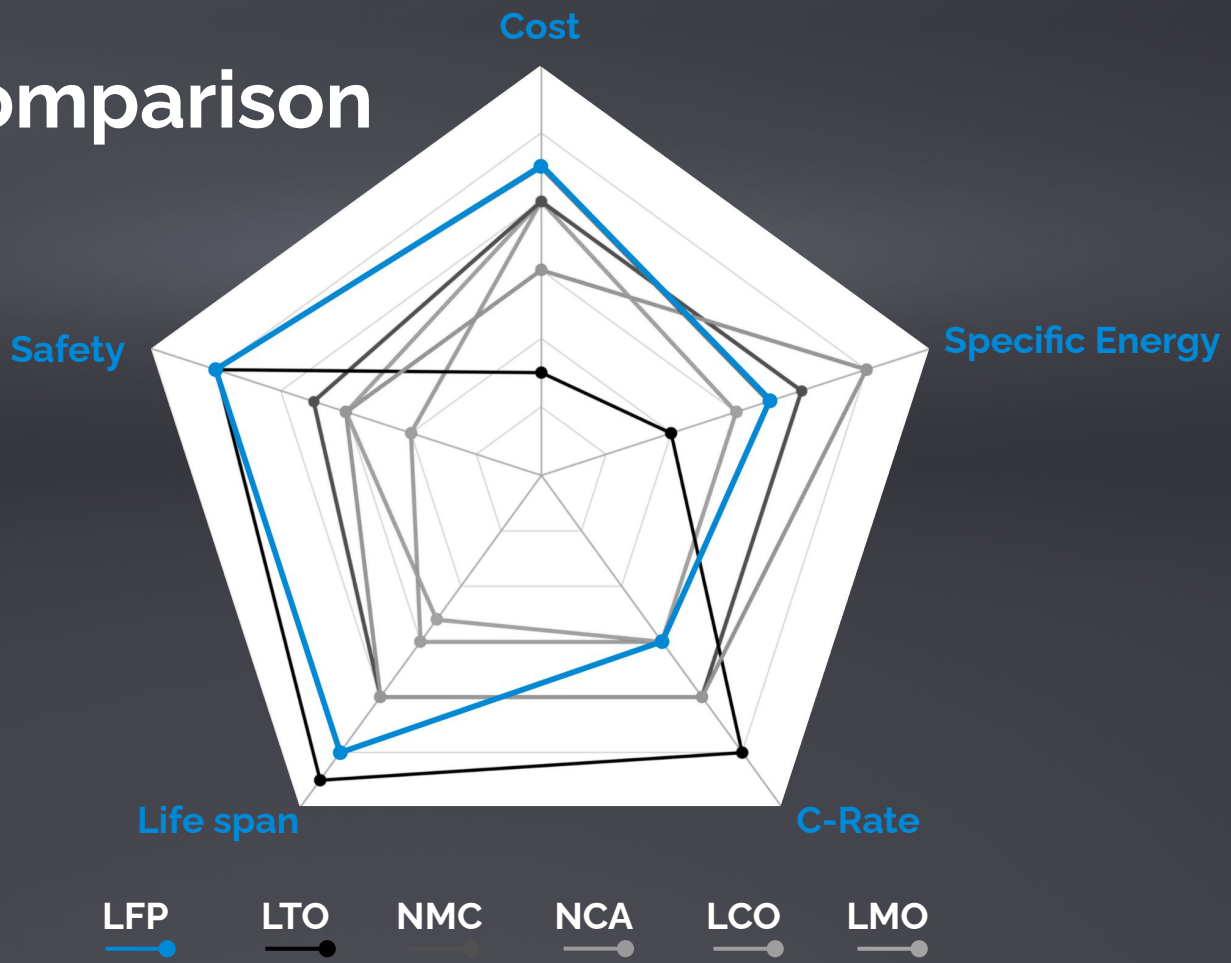
C-Rating 6kW elektromotor

1C	0.5C	0.25C
		
5.8 kWh	11.6 kWh	23.2 kWh

LFP

Energy density	+
Price	++
Size	+
Weight	+
Safety	++
C-rating (charge & discharge)	++
High ambient temperatures	++
Robust and vibrations	++
Cycle life	++
Mounting position	+

LFP Comparison



Part II - Installation

Installation Help

QR-code on all products

Download Center

Product Manuals

Quick Installation Guides

Instruction movies

QR-Codes


SmartLink MX
www.mgenergysystems.eu
MG
Manual
Status
CAN-A
CAN-B
Start / Stop
USB
IO-B
IO-A

Download Center

Including Knowledgebase

Manuals


Experience SmartLink MX
System
MG SmartLink MX
Ok
of charge
30%
Time to go
4d 8h
formation
Power
-39 W
Innovation in energy storage
Version 2.3 – 21-9-2022
Lithium-Ion HE battery module
- Manual -
MGHE240100, MGHE241100, MGHE242100 (HE 100Ah)
MGHE240150, MGHE241150, MGHE242150 (HE 150Ah)
MGHE240200, MGHE241200, MGHE242200 (HE 200Ah)
MGHE240300, MGHE241300, MGHE242300 (HE 300Ah)
Also applicable to older series HP and UHE
MG Energy Systems B.V.
MG

Quick Installation Guides

Installation Videos

Like & Subscribe

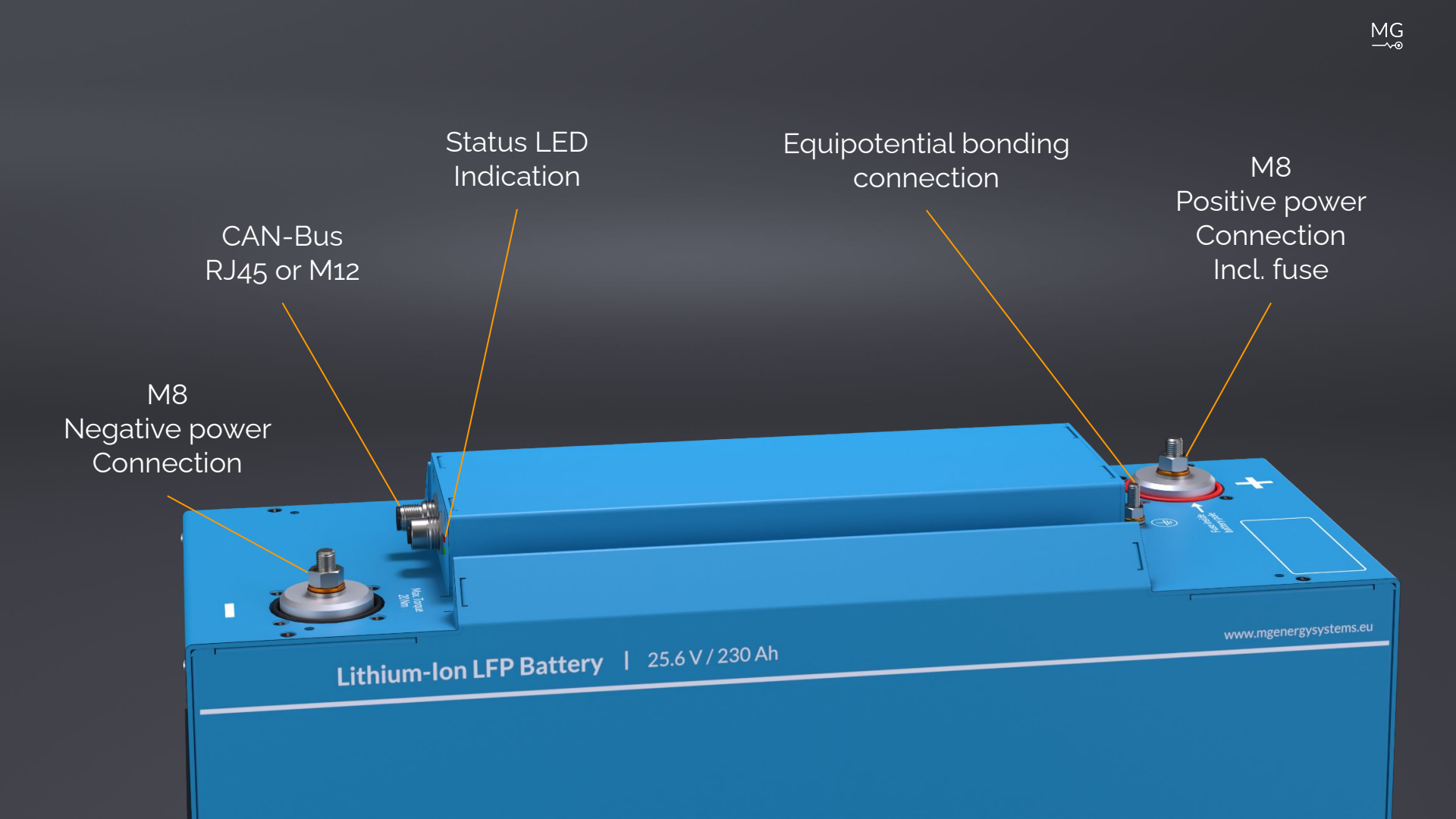
Installation LFP Series

(25.6 Vdc)

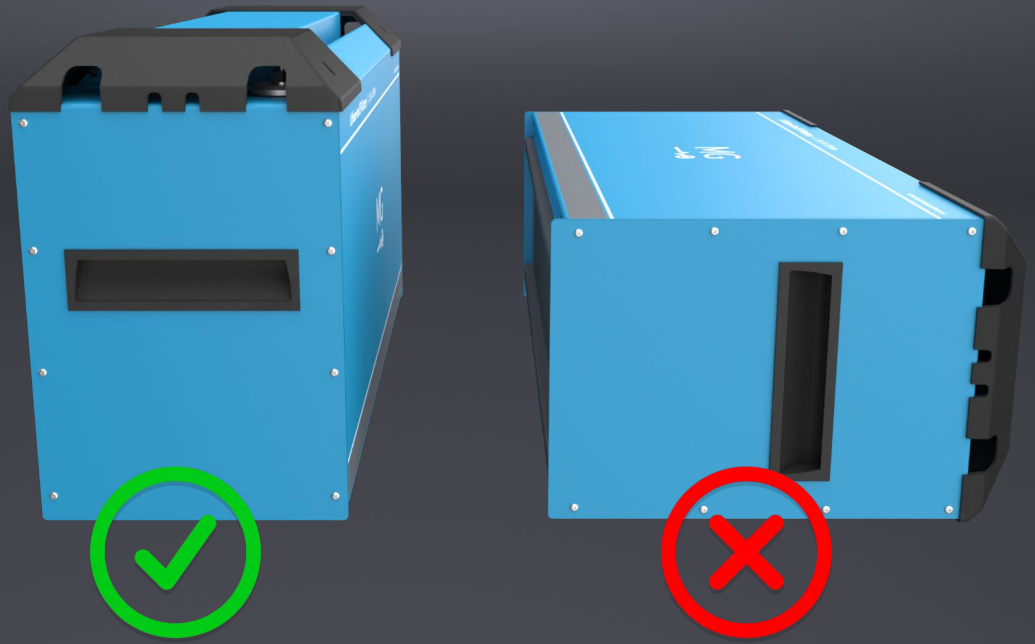
Models

MGLFP240230	MG LFP Battery 25.6V/230Ah/5800Wh	24 up to 96 Vdc
MGLFP241230	MG LFP Battery 25.6V/230Ah/5800Wh (M12)	24 up to 200 Vdc
MGLFP242280	MG LFP Battery 25.6V/280Ah/7200Wh (M12, HV)*	24 up to 460 Vdc
MGLFP240304	MG LFP Battery 25.6V/304Ah/7800Wh	24 up to 96 Vdc
MGLFP242304	MG LFP Battery 25.6V/304Ah/7800Wh (M12, HV)	24 up to 460 Vdc

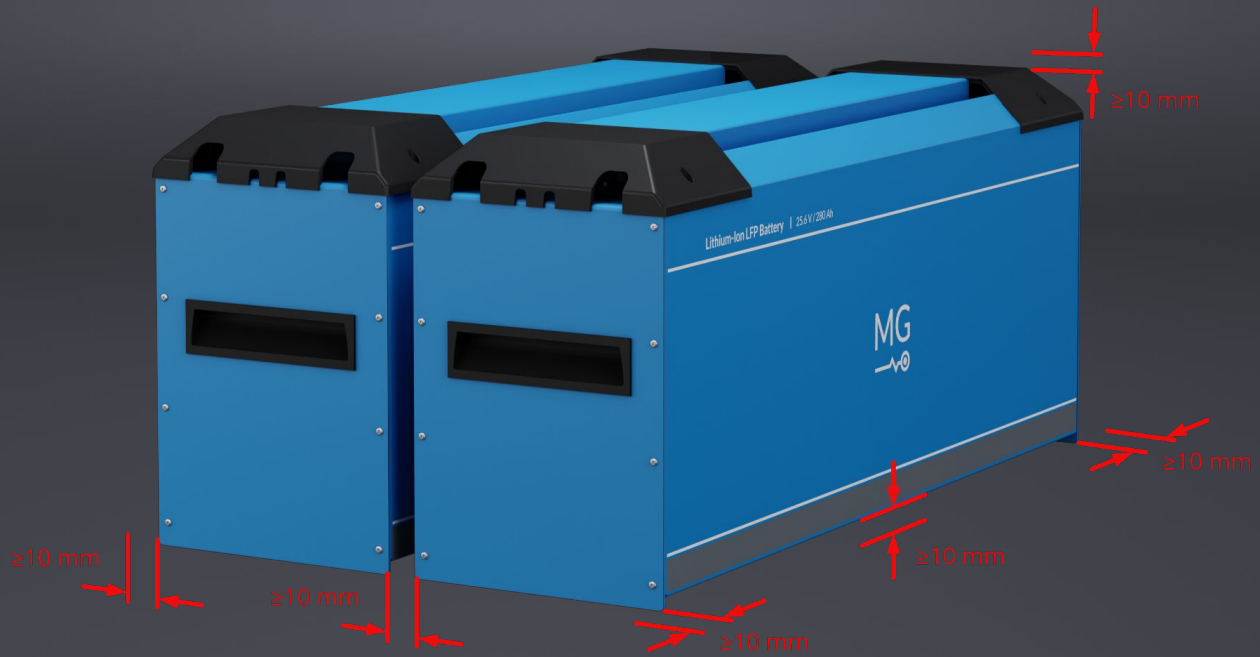
* ES-Trin projects only


Status LED
Indication
Equipotential bonding
connection
M8
Positive power
Connection
Incl. fuse
CAN-Bus
RJ45 or M12
M8
Negative power
Connection
Lithium-Ion LFP Battery | 25.6 V / 230 Ah
www.mgenergysystems.eu

Positioning LFP batteries



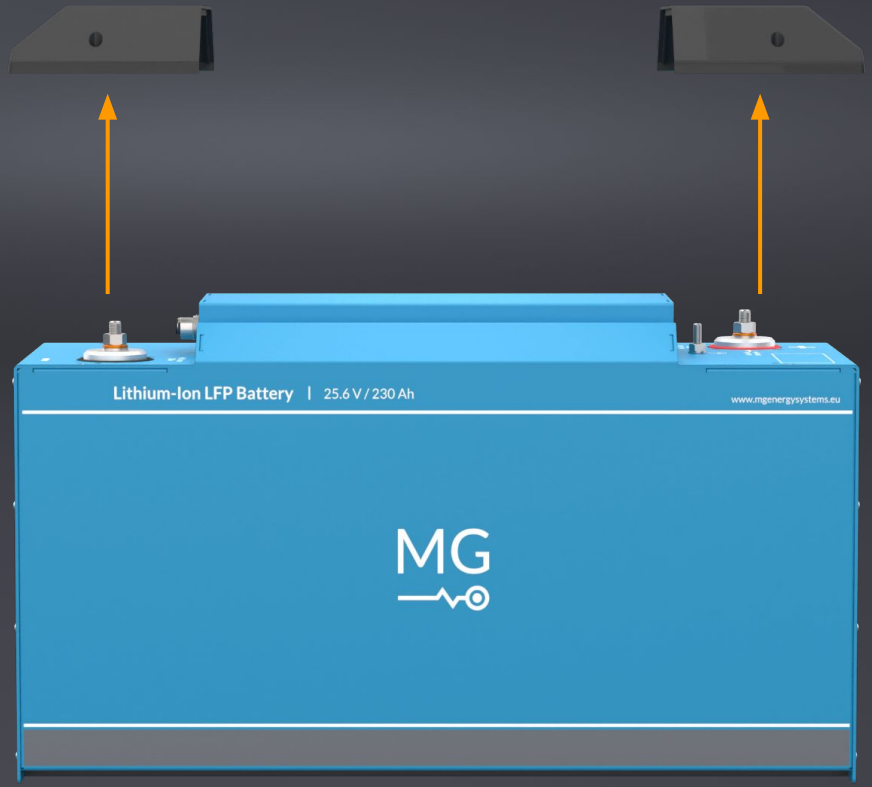
Spacing



Mounting

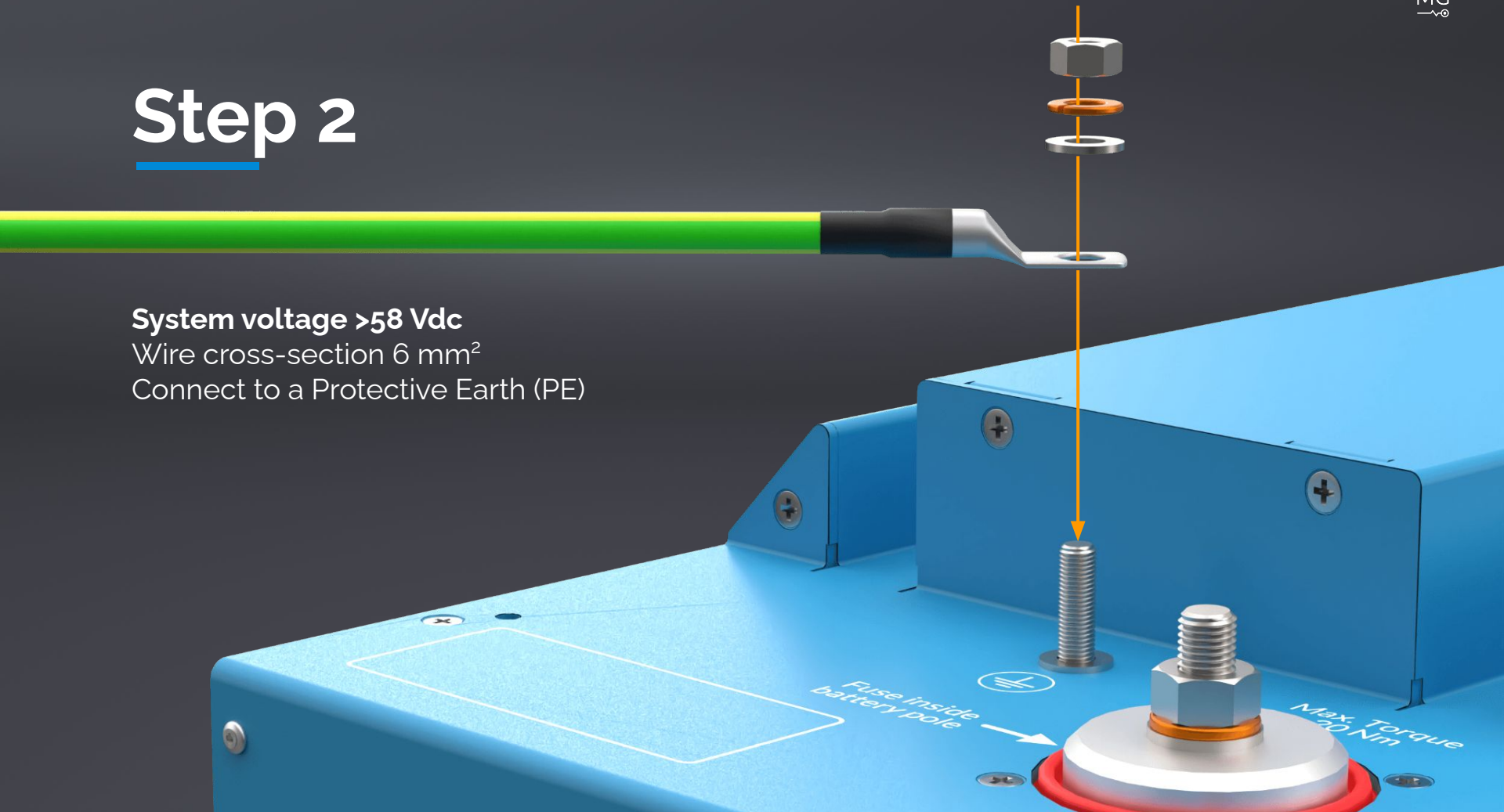
With brackets or straps

Step 1


Lithium-Ion LFP Battery | 25.6 V / 230 Ah
www.mgenergysystems.eu
MG

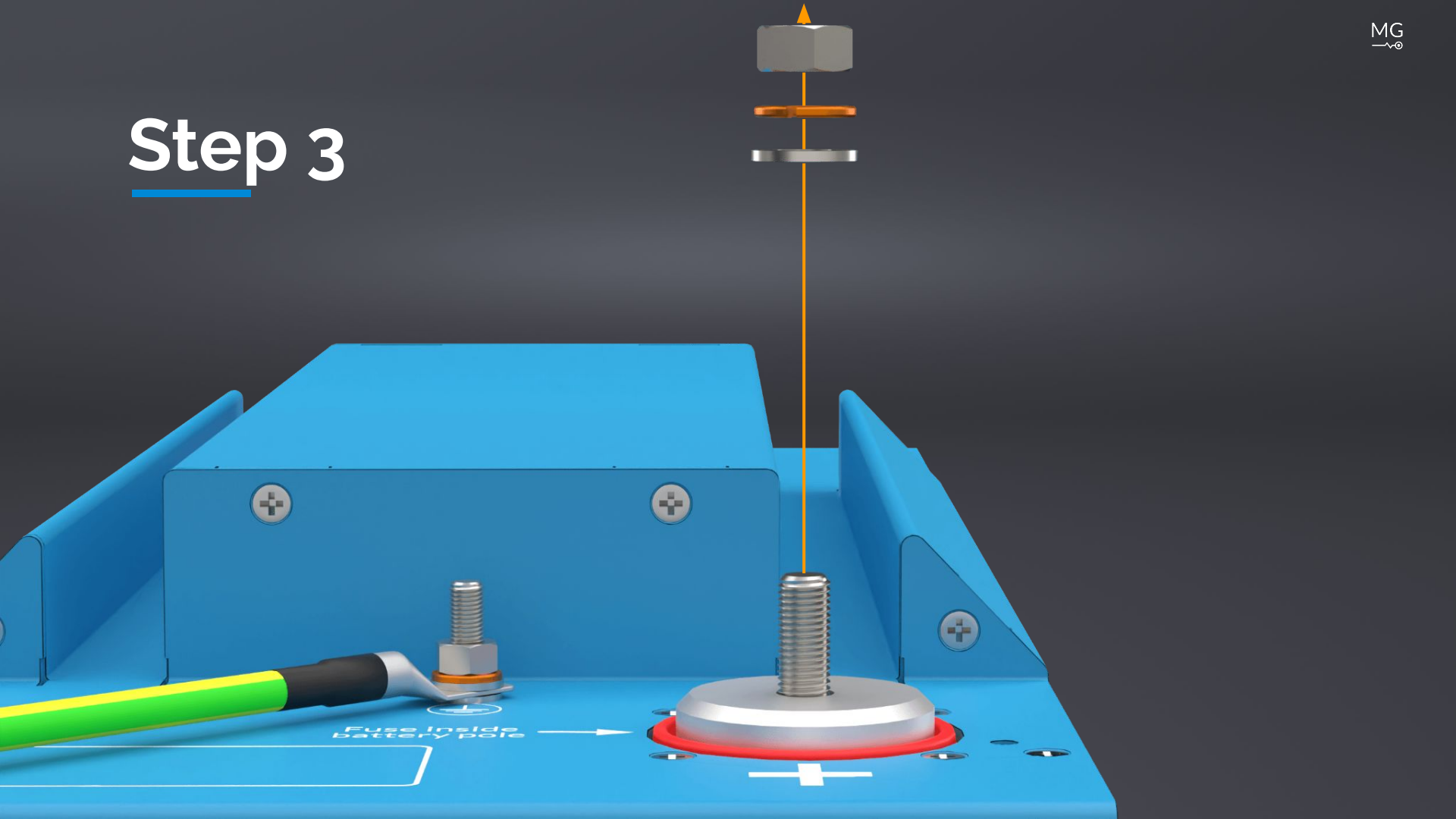
Step 2

System voltage >58 Vdc
Wire cross-section 6 mm²
Connect to a Protective Earth (PE)

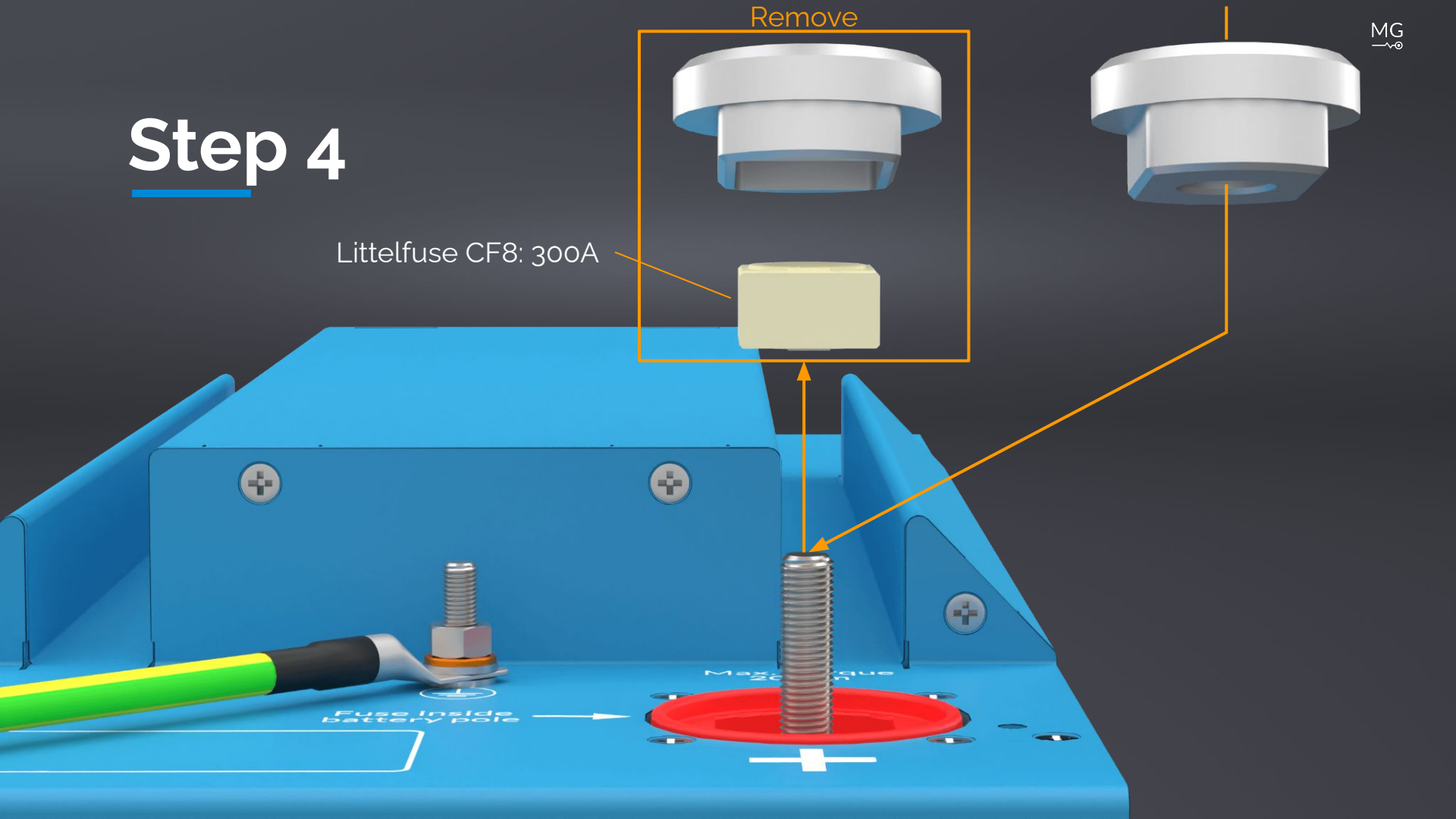


Be Aware!

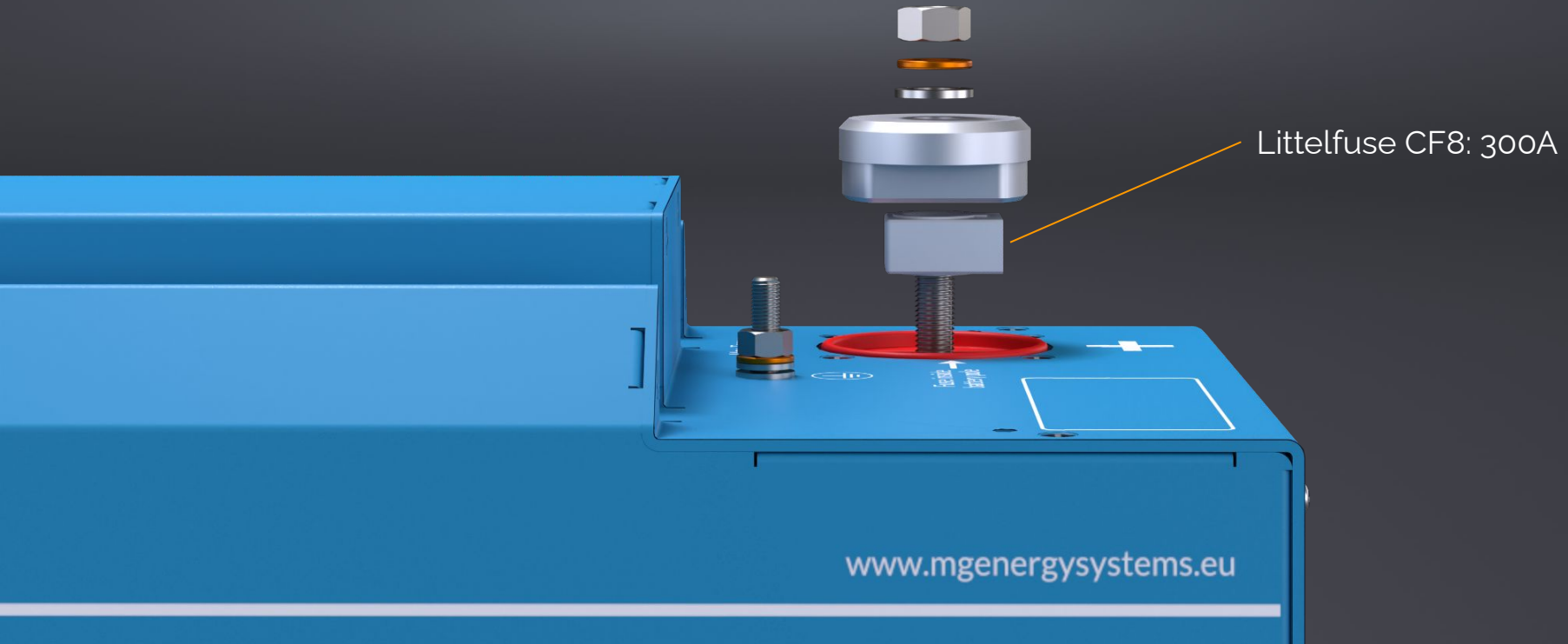
Step 3



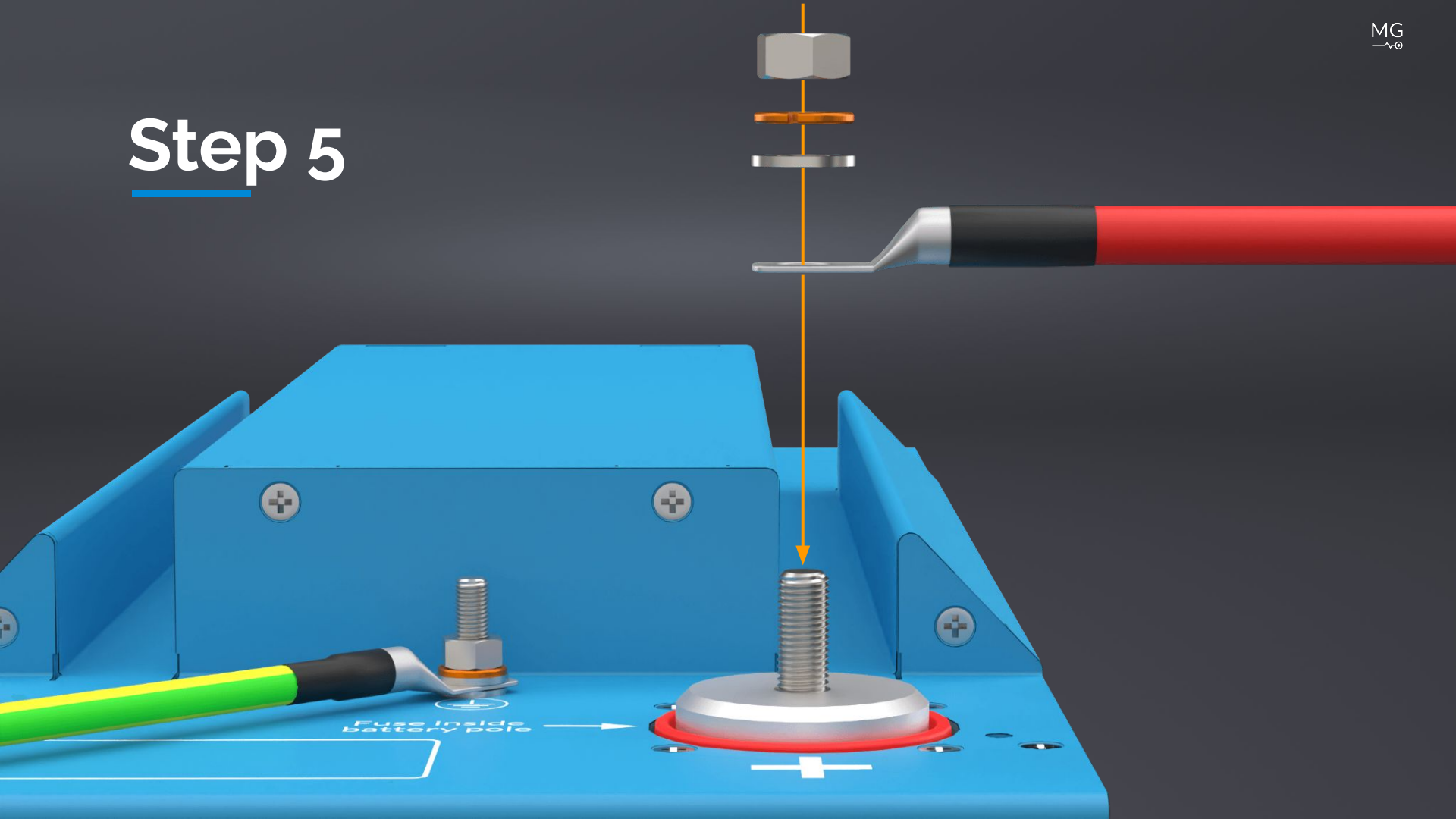
Step 4



Fuse Located Inside + Pole



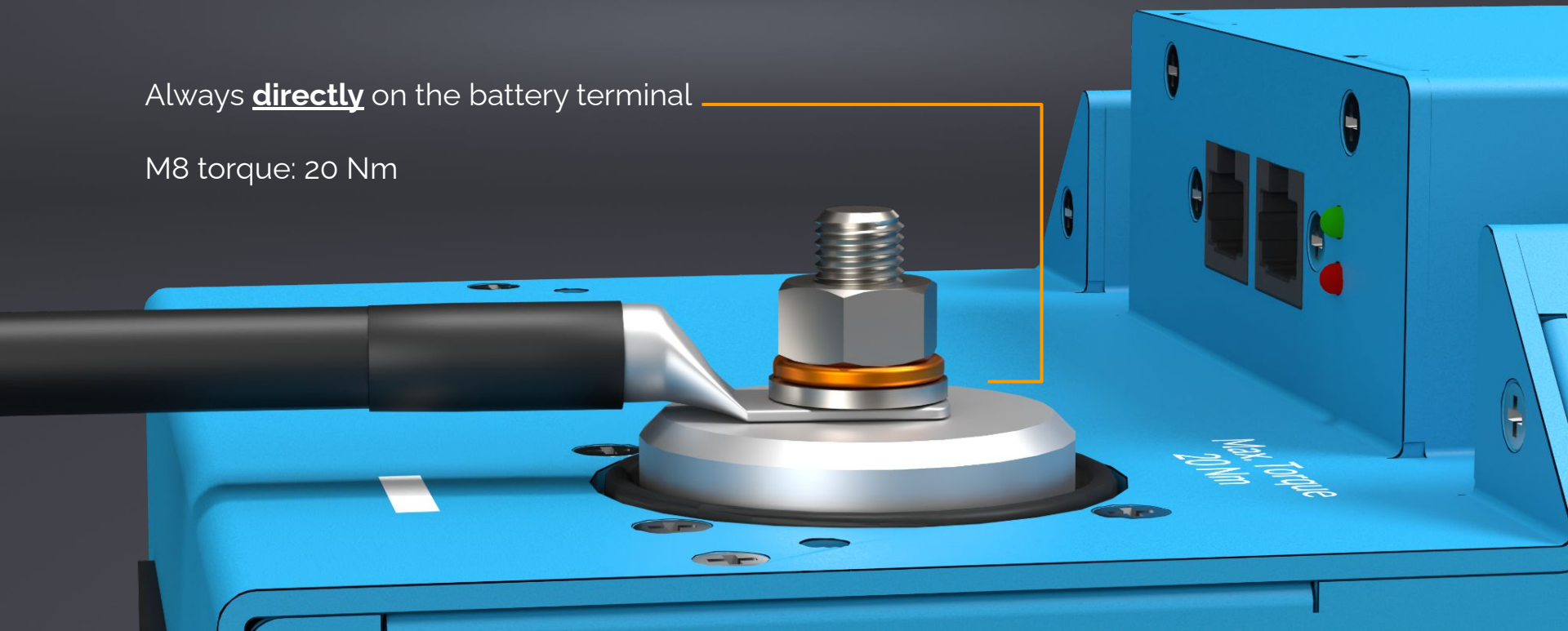
Step 5



Be Aware!

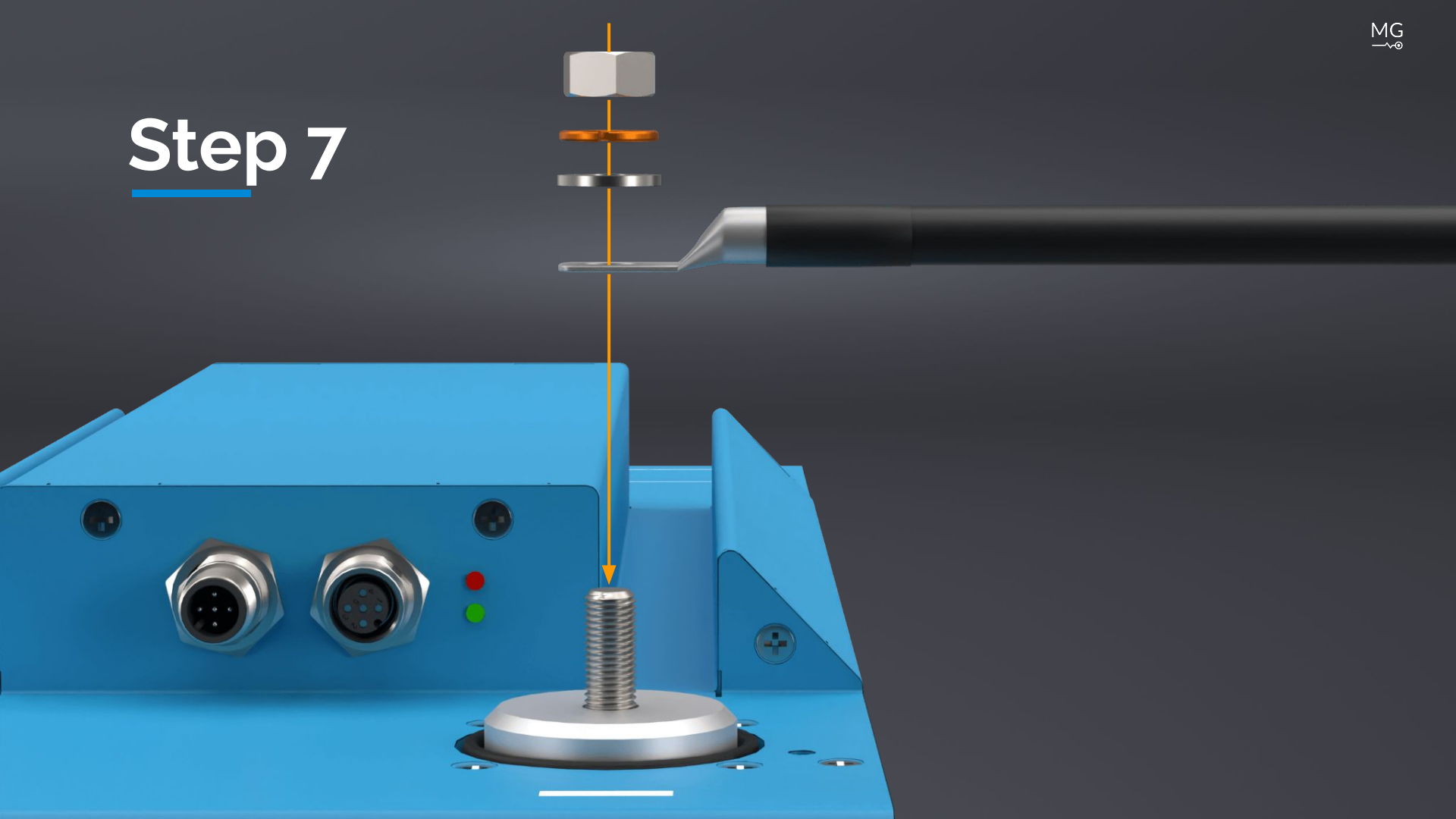
Always **directly** on the battery terminal

M8 torque: 20 Nm



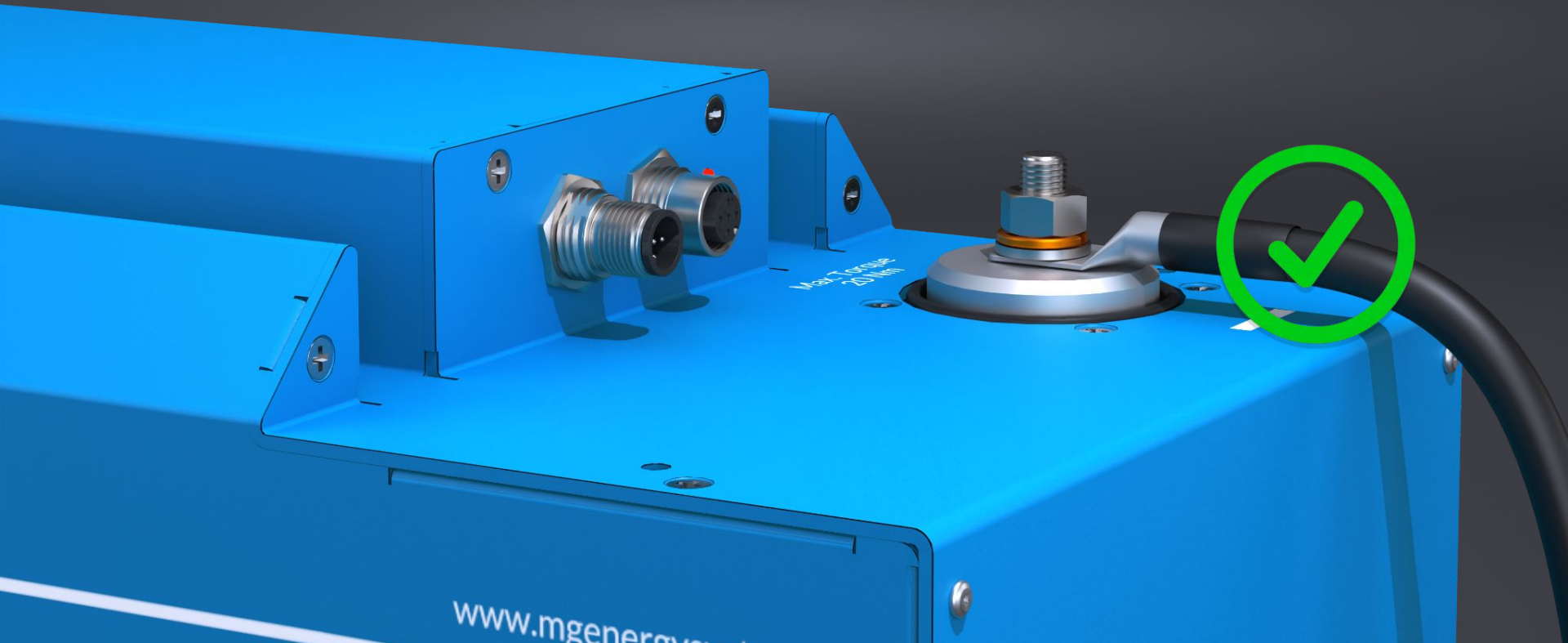
Step 6

Step 7

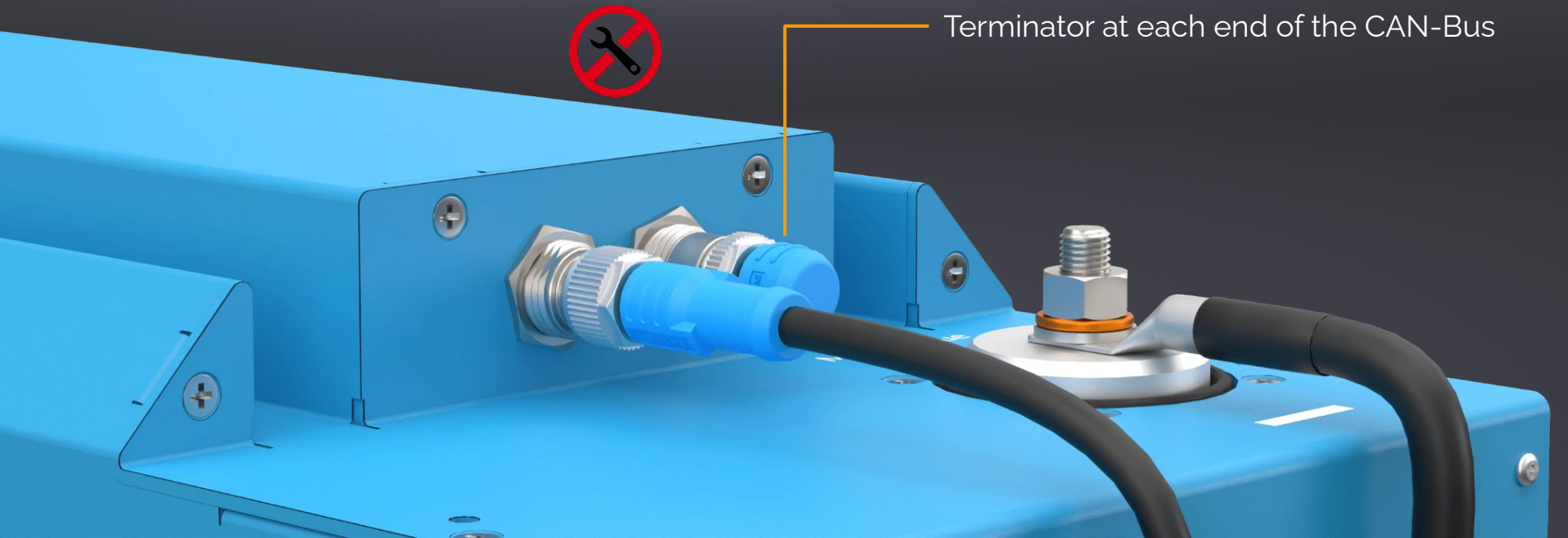


Be Aware!

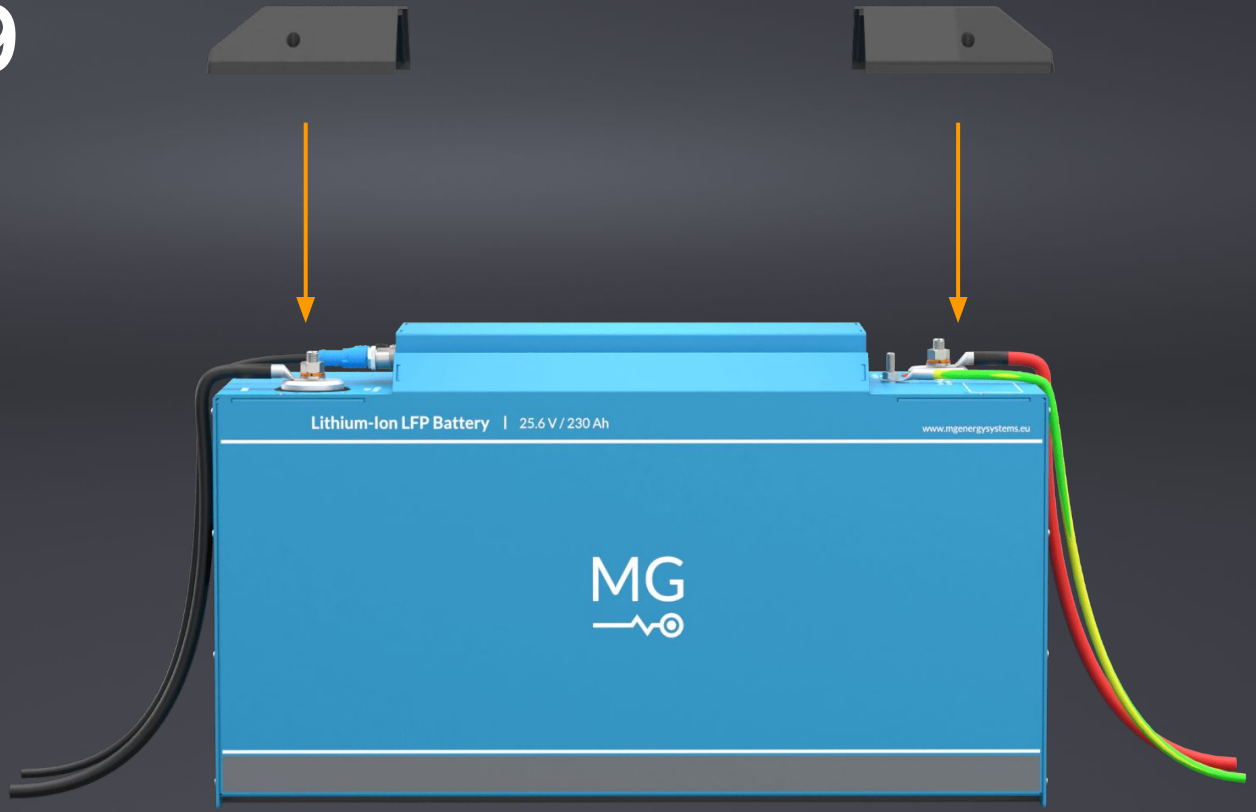
Be Aware!



Step 8



Step 9


Lithium-Ion LFP Battery | 25.6 V / 230 Ah
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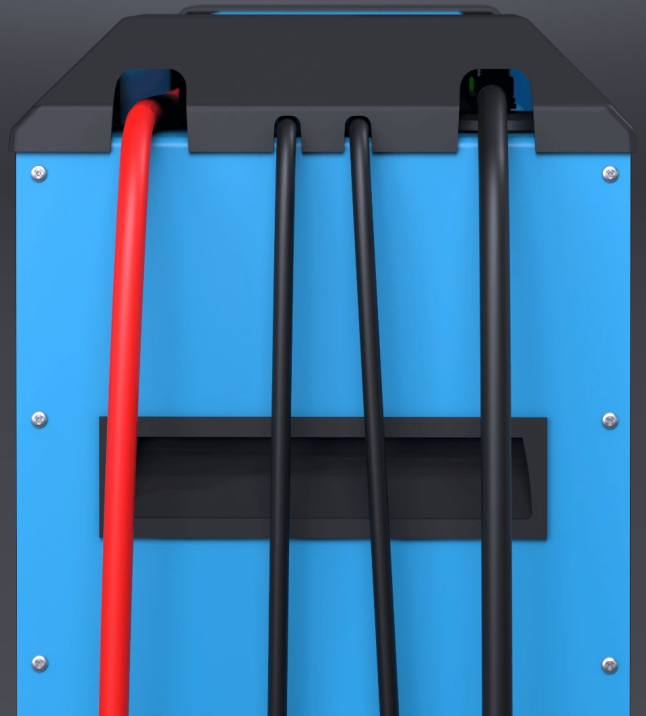
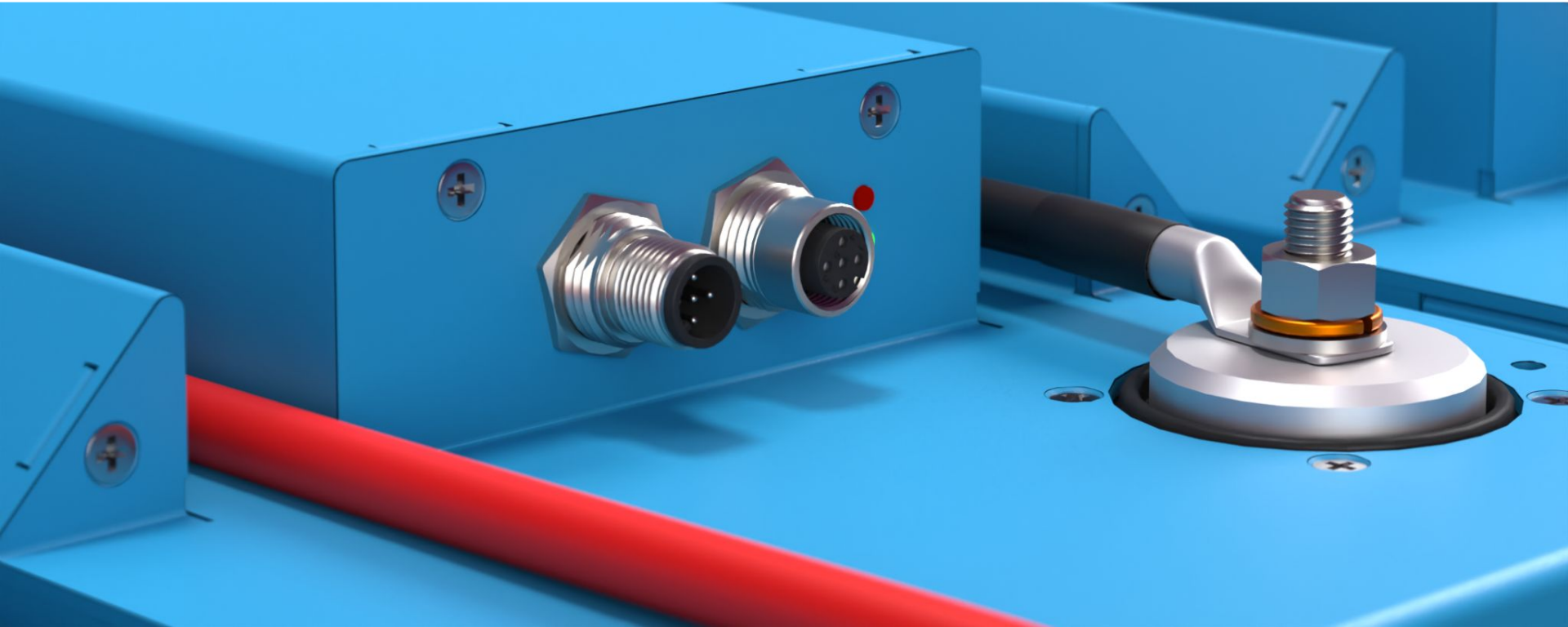
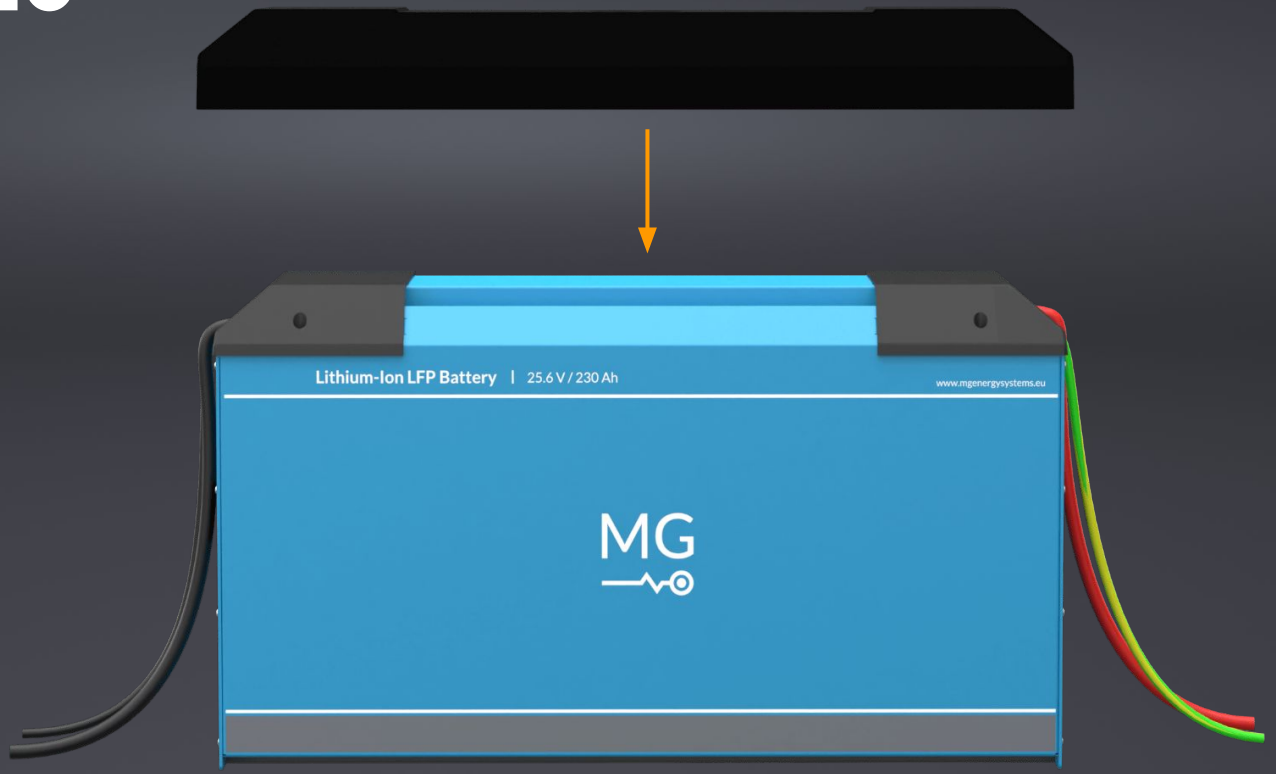
Neat Installation



Use cable trays for DC cabling



Step 10


Lithium-Ion LFP Battery | 25.6 V / 230 Ah
www.mgenergysystems.eu
MG

IP30

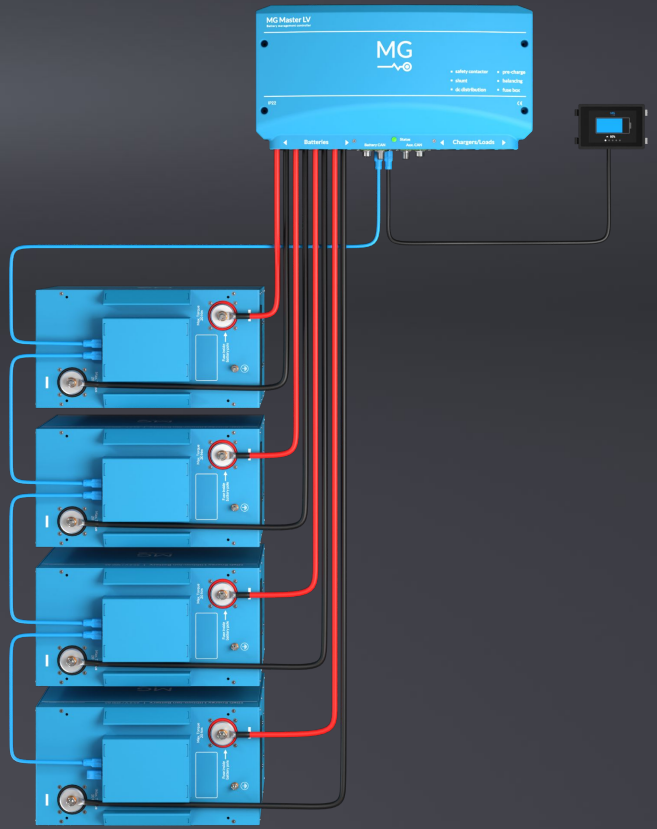
Parallel Configuration

1. Basic
2. At the battery modules
3. Distributor LV

Basic Parallel System

Each battery connected directly to the Master LV

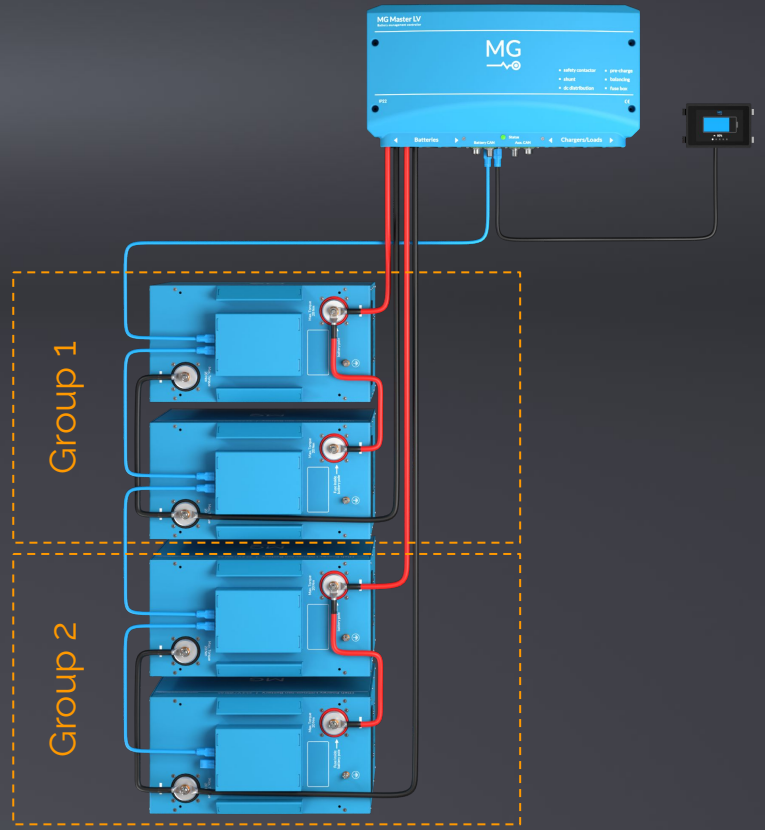
Use same length of DC cables for each string



Paralleling at battery Modules

Two groups of two battery modules

Connect the two batteries in a group crosswise



Distributor LV

M8 Bolt

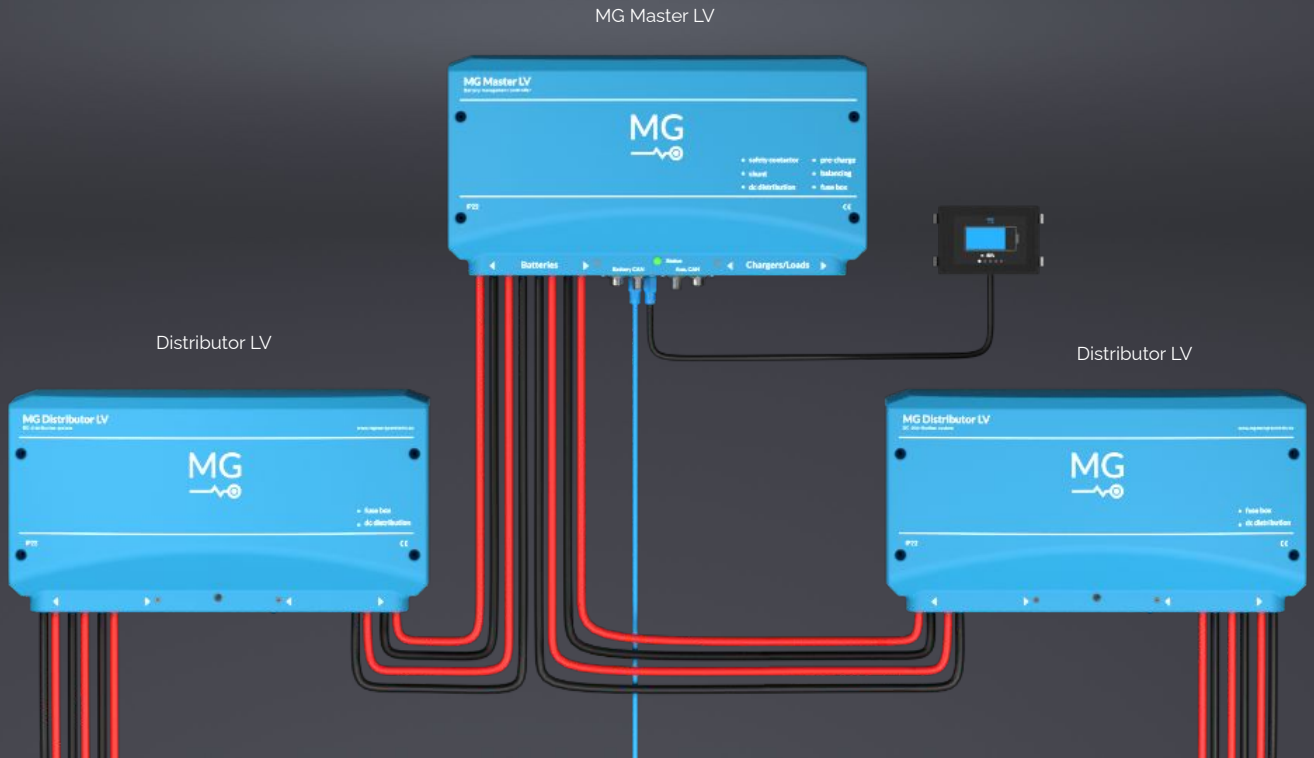
Fuse Holder
MEGA Fuse

Insulation Caps

'+' Positive busbar

'-' Negative busbar

Distributor LV



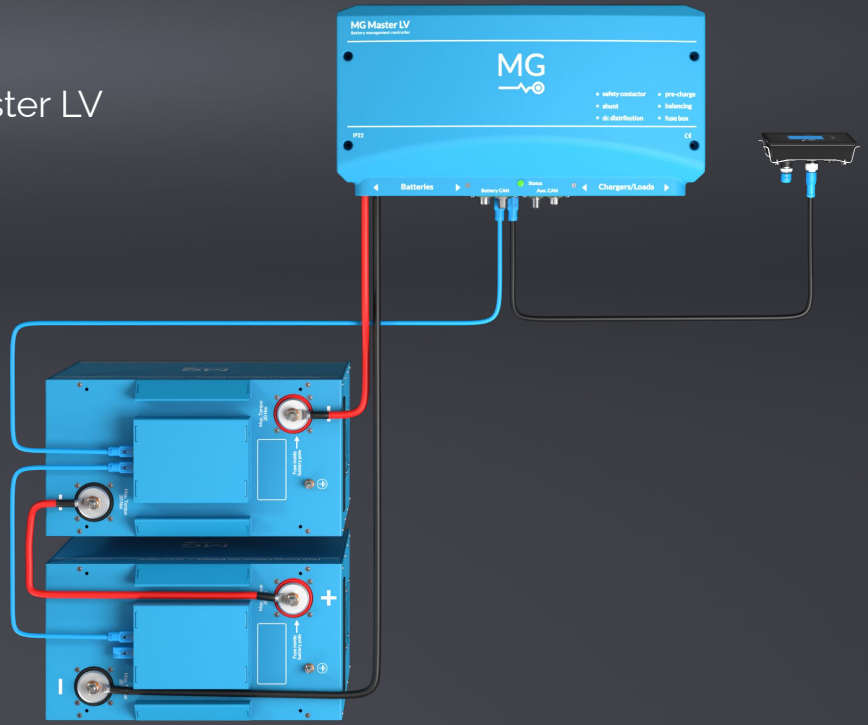
Serial Configuration

1. Basic
2. Battery Types
3. System example 460 kWh

Basic Serial System

One battery string connected directly to the Master LV

Connect the batteries to each other



Battery Types

	Voltage Range	Max Modules in Series	
LFP RJ45	24 - 96 Vdc	4	
LFP M12	24 - 200 Vdc	6	
LFP M12 HV	200 - 470 Vdc	16	(only LFP 280 & 304)

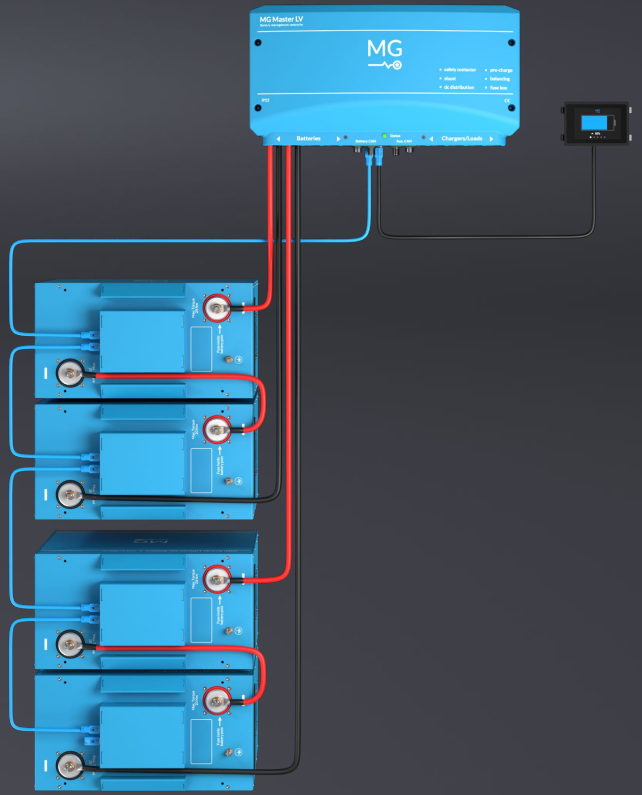
Parallel Serial Configuration

1. Basic
2. Example

Serial Parallel System

Multiple battery strings connected directly to the Master LV

Connect the batteries in series and to each other



Battery Box Guidelines

In general recommended for the LFP batteries, not required

Some depending factors are:

- Type of application
- Size of the battery bank (capacity in kWh)
- Voltage of the battery bank (Vdc)
- Regulations or type approvals

Guidelines, see **AN1028** - Guidelines for placement of batteries in a battery box

Battery Box

Smoke Sensor

Temperature Sensor

Ventilation Fan (Atex)

With gas exhaust connection to outside (safe area).
Class Registration (e.g. Lloyd's, ES-Trin) might require the ventilation fan to run continuously

Ventilation

Ensure there is no incoming water from the ventilation intake

Placement

When not placed in an MG battery rack,
place the batteries at least 10 mm from the floor

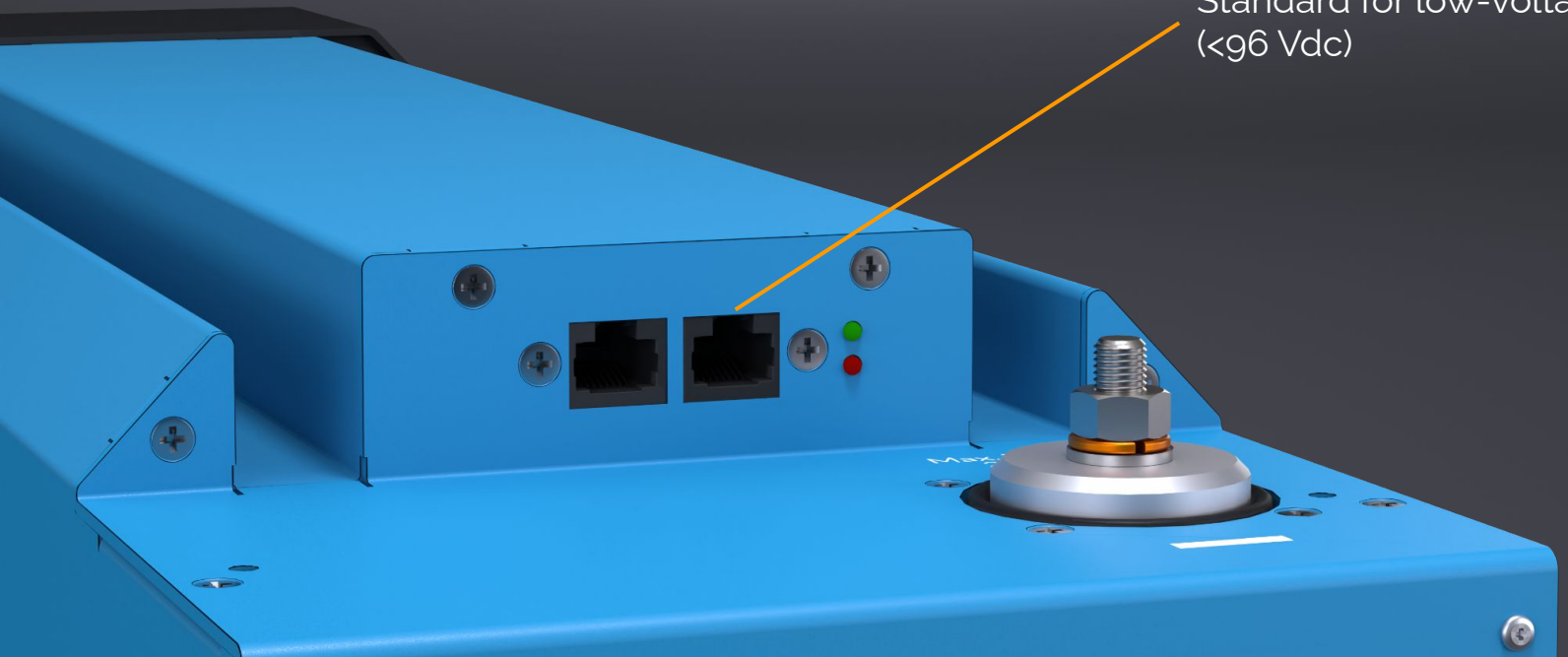
Battery Box

Steel box or sealed compartment
Preferred isolated for 60 minutes fire retardant (A60)
Fluid and gas tight
No electrical switching equipment or junction boxes inside
Install top-ingress covers on every battery
Accessibility for commisioning and service of battery modules must be maintained
Periodic inspection of the battery system and compartment recommended

CAN-Bus RJ45 & M12

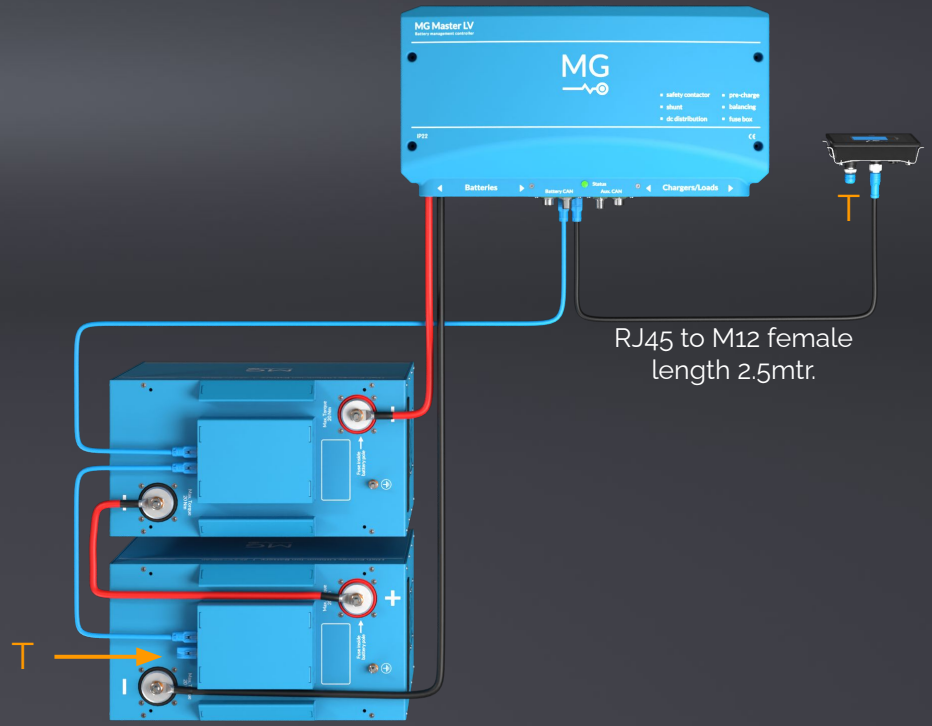
1. At the battery modules
2. Using the Distributor LV
3. With a custom busbar connection system

RJ45 CAN-Bus



RJ45 CAN-Bus

1. Connect MG Master LV with first battery
2. Connect following batteries
3. Termination resistor on both ends

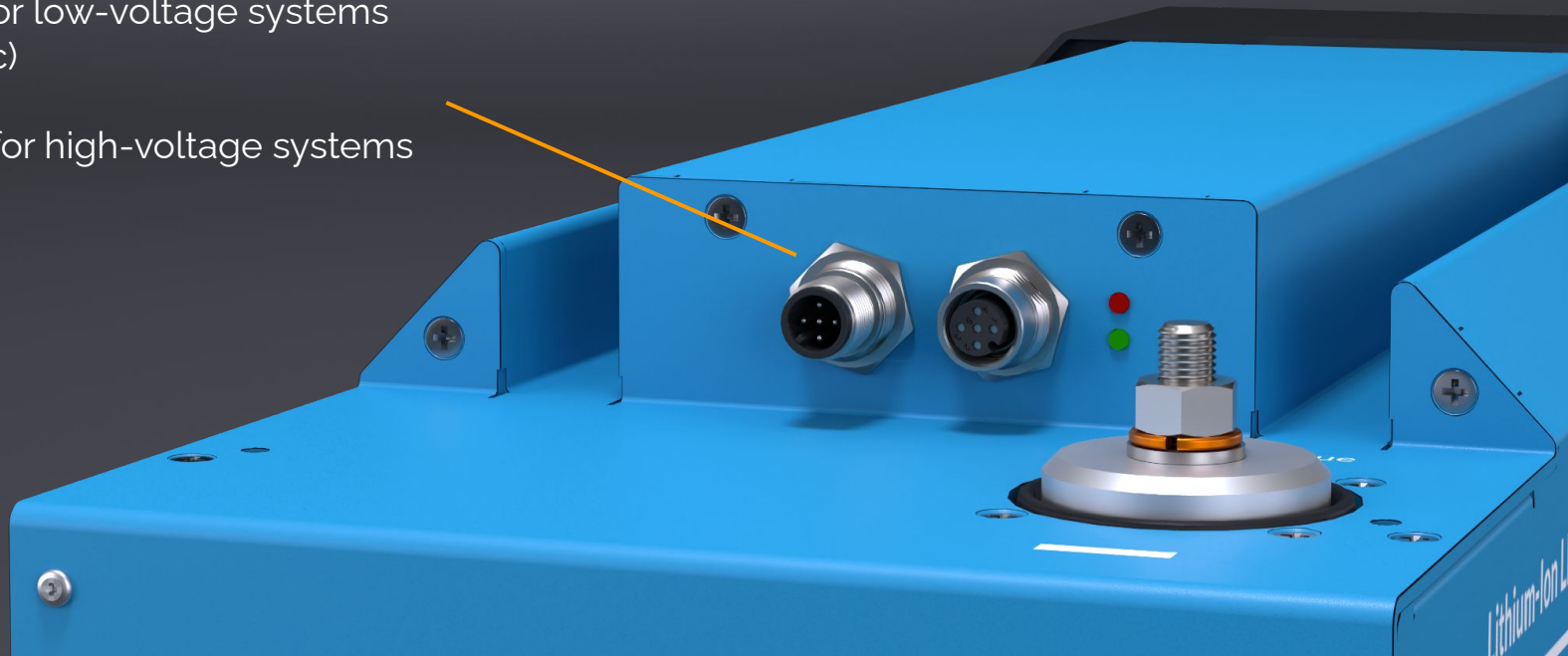


T = Termination resistor

M12 CAN-Bus

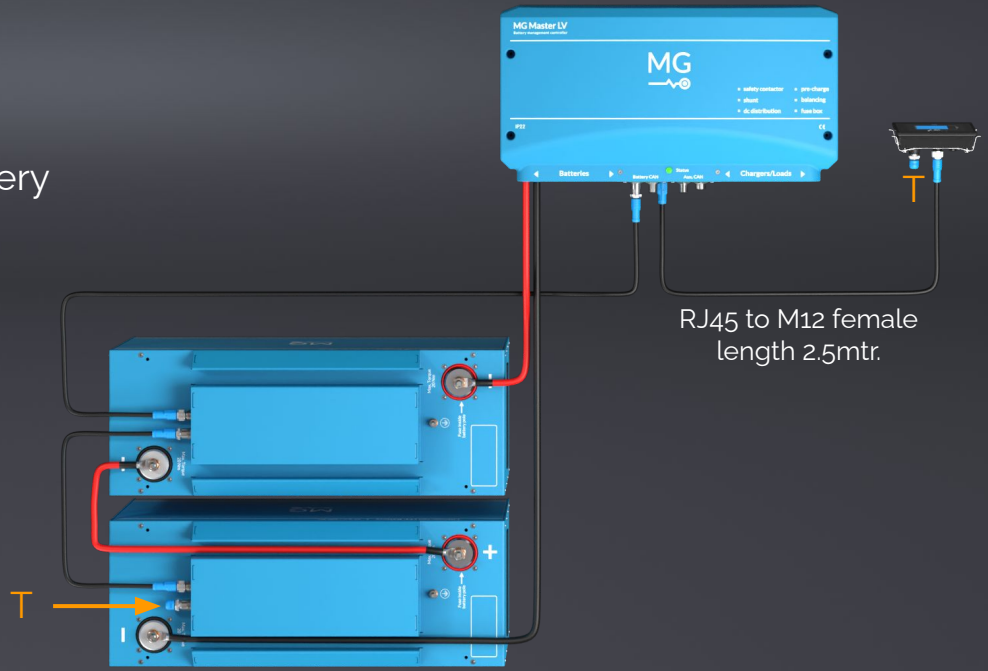
Optional for low-voltage systems
(24-96 Vdc)

Standard for high-voltage systems
(>144 Vdc)



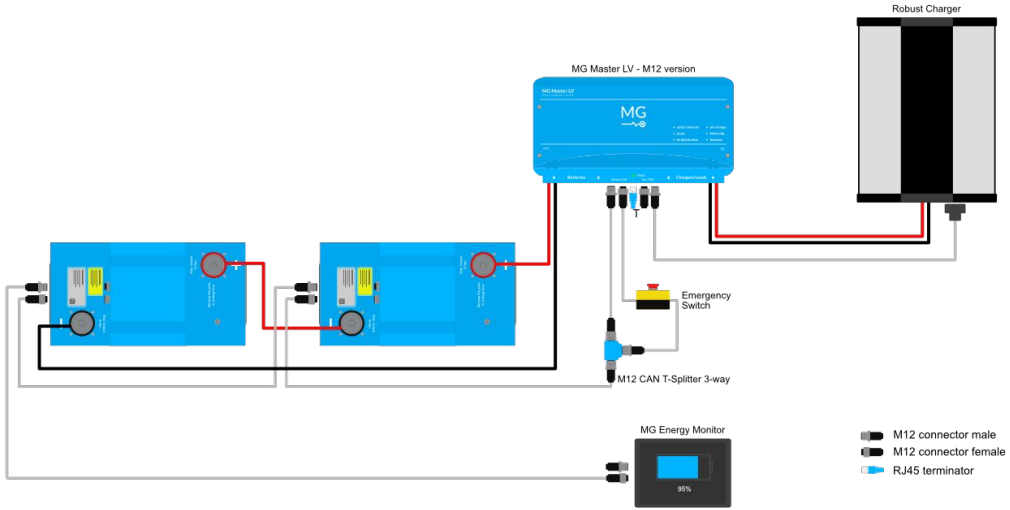
M12 CAN-Bus

1. Connect MG Master LV with first battery
2. Connect following batteries
3. Termination resistor on both ends

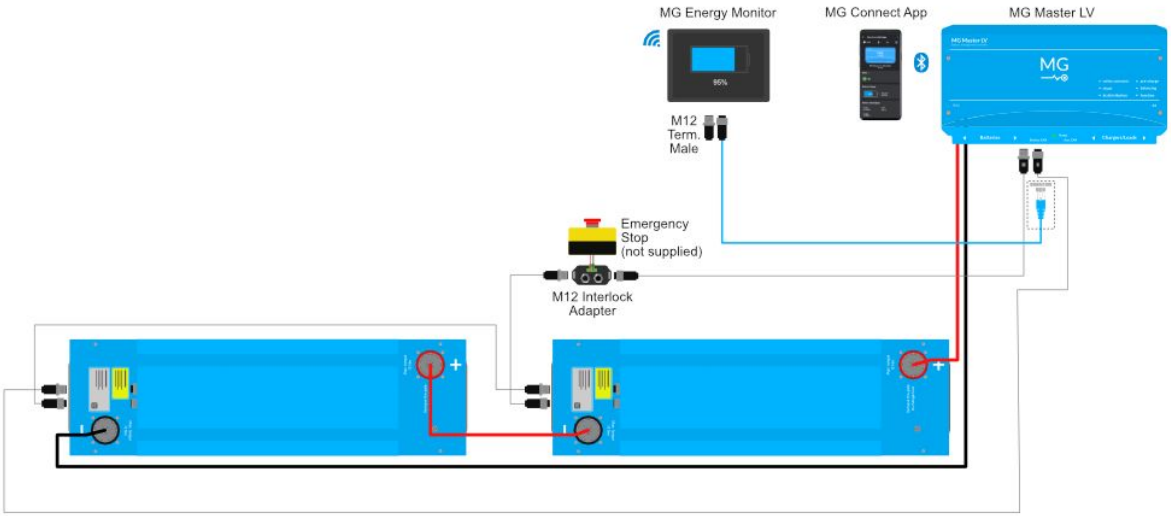


T = Termination resistor

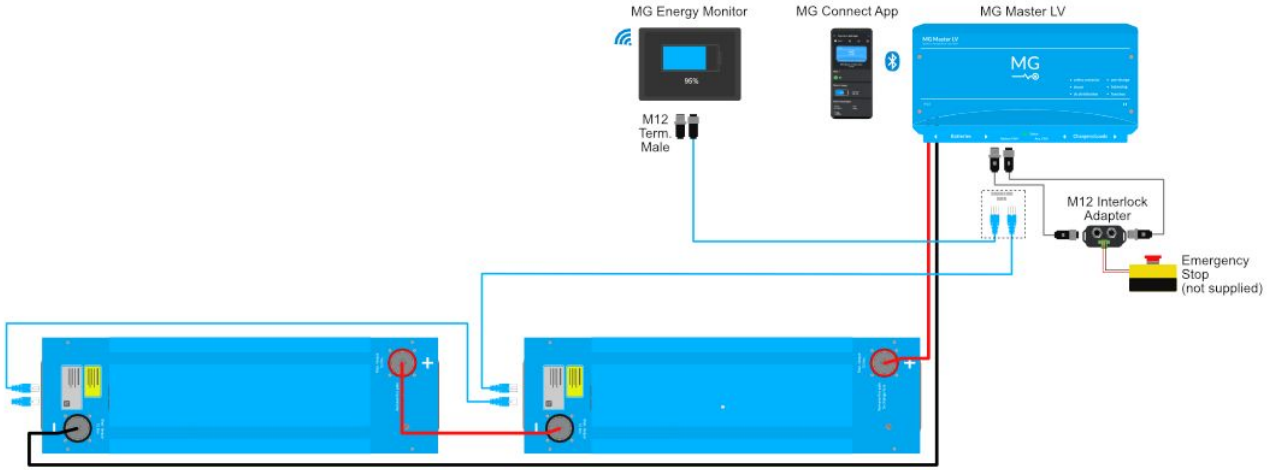
Charger integration



M12 Interlock Adapter



M12 Interlock Adapter (RJ45 Installation)



MG